5-2011

A Dynamic Network Analysis of Vision in Complex Organizations

Jon Christiansen
Clemson University, jonc@clemson.edu

A DYNAMIC NETWORK ANALYSIS OF VISION IN COMPLEX ORGANIZATIONS

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Educational Leadership

---

by
Jon Christiansen
May 2011

Accepted by:
Dr. Russ Marion, Committee Chair
Dr. James Satterfield
Dr. Tony Cawthon
Dr. Craig Schreiber

ABSTRACT

The purpose of this study was to model the role of vision in a complex organization and the roles that agents, tasks, knowledge, roles, resources and beliefs play. For this purpose, an investigation into the current structure of this model is conducted. Additionally, this study sought to develop a better understanding of how agent's individual vision and beliefs about the organizational vision can be influenced over time. This purpose sought to identify the evolution of vision, therefore, required a method that simulates how these entities change over time. Dynamic Network Analysis was utilized to capture an understanding of the existing organizational dynamic and to analyze the changes in the dynamic over time using simulations.

Results found that complex organizational vision is rooted by leader and organizational values and beliefs. The present state of the organization is composed of people, knowledge, resources and roles, while these individuals bring with them organizational pressures, concerns, and perceived obstacles. Through interaction and interdependency, individuals exchange ideas, aspirations, and beliefs. Upon interaction, individual beliefs converge and neutralize toward organizational beliefs, while internal and external tension is applied. Vision emerges through the interaction of these entities over time. Consequently, reduced interaction has a stifling impact on vision. When organizational members do not commit to vision at some level of preferential capacity, organizational performance can be severely damaged, in the form of knowledge loss and task failure.

DEDICATION

I dedicate this work to my father, a true “iron horse”; for his perseverance, wisdom, and the inspiration he has imparted to earnestly pursue knowledge.

ACKNOWLEDGMENTS

In my years of learning, I have come to understand that one man is no man; rather, every person is a composition of those they have had the blessing of crossing paths with. A scholar of such understanding is that of my committed chair, Dr. Russ Marion. I am forever grateful for all I have and will continue to learn from Dr. Marion. I appreciate his guidance in times of pondering, his support in times of struggling, and for enabling me to learn many lessons independently. Your commitment to your students does not go unnoticed.

Next, I would like to thank Dr. James Satterfield for three years of mentorship and scholarship. I most appreciate your ability to challenge my thinking, allowing for a fresh perspective to what I truly believe in, and where I should place my personal convictions. Dr. Tony Cawthon has been an excellent mentor, voice of reason, and beyond both of these, a true scholar and practitioner of student development. I very much appreciate the respect and honesty you have shown me throughout this process. Lastly, I want to thank Dr. Craig Schreiber, whose analytical mind, honest and trustworthy approach, and commitment to my learning has impacted me to an immeasurable extent. I most appreciate learning from Dr. Schreiber that proper interpretation and an open mindedness is the key to quality research. He will likely always go down as my favorite Red Sox fan of all time.

I would also like to thank my peers and classmates for all of your support. First, I want to thank Colonel Ed Deiluio for many unique opportunities many graduate students do not have access to, both in research and in practice. I also want to thank Ed for having

the only last name I know that is harder to spell than my own. I also want to thank Daniel Bennett for being a solid marathon partner, and in many ways setting the pace for us both. I am very excited to see all that he will accomplish in the years to come following your years committed to higher learning. Third, I would like to thank Tony Franklin for the encouragement, friendship and generosity you have offered me in the past few years.

To my mother and father, I am both excited and humbled that we can celebrate this experience together. Without your sacrifice, commitment and support, this dream could never have come true. I love you both very much.

I also want to extend a very special thanks to Dave Sparks, who gave a walk-on an opportunity that I consider a turning point in my educational process and in my life. Reflecting on the past two years, I realize how far I have come due to the opportunities Dave has offered me and the wisdom he has imparted, and for that, I am forever grateful. Also, I want to thank Rich Groom, Leanna Garrison, Kevin Bray, David Williams and Tasha Woods for the priceless support and sacrifices they have made to ensure finishing this degree would be a reality. These folks are all among the most reliable and loyal people I have met in my life, and for that, I humbly thank them.

Without question, my gratitude is greatest for the love of my life, and my future wife Heather. I could try to explain how instrumental she has been in my life, but without proper justice for how I truly feel. You are my everything, and my inspiration for all potential successes for which I strive. I love you with all of my heart..

TABLE OF CONTENTS

Page

Table of Contents (Continued)

Page

LIST OF TABLES

List of Tables (Continued)

Table Page

List of Tables (Continued)

LIST OF FIGURES

List of Figures (Continued)

Figure Page

CHAPTER ONE

INTRODUCTION

The Problem for Organizations

Evidence exists throughout literature that underscores the significant importance of effective organizational vision. Kotter (1995) suggested that three of the eight primary reasons why organizations fail can be traced to issues with the organization's vision. Vision was particularly important when there was evidence of confused purpose, employees were not challenged, and the organization lost legitimacy. Additionally, it was necessary when the organization was behind the time, employee pride and morale were low, employees were unwilling to accept ownership and responsibility for new projects or change, there is an absence of shared progress, there is a lack of respect for management and there is an influx of rumor-mill communication (Nanus, 1992). While effective vision is necessary, proper communication, organizational fit and execution were equally critical. Larwood et. al (1995) contended that leaders often fail to perceive risks related to vision. This finding was alarming given the volatility that exists in complex organizations. They proposed that organizational vision may possesses many attributes of risk that, if not considered appropriately, could cause serious harm to the organization.

Larwood's et al (1995) caution was attributable to several things. First, organizations were complex. Since organizations were complex, the resultant vision wer often complex as well, notably in its organization, communication and delivery and in practice. (Nanus, 1992; Kotter, 1995; Conger, 1999). Given the parallels of complexity

between vision and the organization itself, the potential existed to, over time, shift from the potential of positive growth to the emergence of a complex set of tasks which ultimately lead the organization in the wrong direction (Kotter, 1995). Specifically, a vision may look sound in a document or a message to the organization, but the resultant actions can lead to confusion between job related tasks and new roles adopted from the vision. Second, communicating vision was difficult with respect to contextual communication (verbal, written, word-of-mouth) (Berson et. al, 2001) and the level of which followers communicate and receive information (from the leader or word-of-mouth) (Amalweh and Gardner, 2001).

Third, vision was only effective if followers committed to it (Avery, 2004). If individuals could not connect with the vision, they were left with choosing between the new vision and their personal interests rather than aligning the two. Fourth, vision was time sensitive. Kotter (1995) warned that if success is not imminent in the early stages of the vision process, nothing effective emerges. Fifth, in the context of applying new vision to an organization, leaders faced multiple obstacles. Examples of obstacles included time, financial resources, information asymmetries, and economies of scale. Obstacles were increasingly difficult when a key obstacle was a human agent. Humans move about the organization, diffuse information, and decide which information should be shared with whom (Carley, 1999). In this framework, humans possessed the potential to influence others, which could prove to be beneficial or harmful. The challenges for vision are discussed further in Chapter 2.

Purpose of Research

While vision carries risks, it also carries rewards, or it can have significant positive effects on an organization. Numerous empirical studies have uncovered the significant relationships and effects of a guiding organizational vision. Vision was positively linked to job satisfaction and perceived efforts in providing quality service (Testa, 1999), enhanced motivation and futuristic organizational goals (Khatari, Ng and Lee, 2001), perception of leadership effectiveness (Groves, 2006), and the outperforming firms which lack an aligned vision (Kotter and Heskett, 1992).

Testa (1999) summarized three types of literature related to vision in leadership. The first focuses on behaviors of effective leaders, particularly as they relate to vision. It is within this body that scholars explore vision at the leader level by connecting vision with successful leaders. The second stream composed of research and commentary related to defining vision itself and describing how to develop vision statements. The third body of research framed vision in the context of leadership theory, which transitioned into empirical studies of the effects of vision. As opposed to viewing vision at the leader level, which studied the leader as an individual, this body of research placed vision within applications of leadership theory, often as a component of leadership. Organizational vision was a popular topic from the mid 1980's through the mid 1990's. During this time period, scholars of leadership and organizational theory reflected on their experiences and observations and over time developed descriptions of the components of vision. At this point, entity based (leader level, as opposed to collective) leadership scholars have reached consensus on the common components of vision. In

this light, the perspectives of organizational vision reached a "fork in the road," as scholars chose to frame vision in one of two ways. The first perspective applies vision as an integrated component of leadership theory, and the second perspective treated vision as a mutually exclusive, stand-alone component of organizational theory.

In the past decade, empirical work has expanded to understand the influences that organizational vision has over members of an organization and on those they serve. Much of this research (Conger & Kanungo, 1998; Kirkpatrick & Locke, 1996; Sosik & Dinger, 2007; Amalweh & Gardner, 2001; Strange & Mumford, 2002; Avery, 2004; Kantabutra & Avery, 2006; Groves, 2006) suggested implications at the top-level leadership and management levels, while much less is known about a bottom-up, interactive dynamic of vision.

After a thorough review of the literature of vision in organizations, it appears that the entity based scholars of organizational vision have reached a pinnacle of understanding. In summary, for nearly 30 years, many of these understandings have remained the same, yet glaring issues with respect to vision still exist. While there is much known about the risks and benefits of organizational vision as well as the conditions of vision from an entity based approach, little is known about contextual factors that enable or disable vision within complex organizations. McKelvey (2008) implied that "at this reading, I do not see that dispersed leadership theory provides a focused offset to the suppressive effects of aggressive top-down visionary leadership" (pg. 239). These suppressive effects McKelvey speaks of invites a new perspective for looking at organizational vision through the lens of the complex organization.

The state of vision literature calls for a new way of thinking about vision in organizations. Consequently, Corbin and Strauss (2008) suggested that a unique purpose for research is to suggest a new approach for looking at a tenured idea. Specifically, this study is designed to model the role of organizational vision in a complex organization and the roles that agents, tasks, knowledge, roles, resources, and beliefs play in the composition of vision. The purpose is to develop a better understanding of how agent's individual vision and beliefs about the organizational vision can be influenced over time. Additionally, this research suggests Dynamic Network Analysis as a methodology for studying, understanding, strategizing and implementing a vision for organizations.

Research Questions

This research is guided by the question: How does organizational vision interact with networked interdependency among organizational agents (people, resources, knowledge and roles) to influence leader-related beliefs and task performance? To support this question, the following questions are posed:

1. What distinct groupings related to the organizations' vision exist within the dynamic network?
2. How does social and relational influence and knowledge interaction impact the beliefs of agents within an organization?
3. How would the organizations' vision change conditioned on the removal of internal and external pressures, organizational concerns and perceived obstacles?

4. Which pattern of vision (uniform or fragmented) is most effective for organizational learning and task performance?

Research Methods

This research is exploratory in nature and assumes that organizations are complex—characterized by often unpredictable, emergent events. Qualitative inquiry is applied in this research to understand the worldviews of the participants. This inquiry allows for the emergence of discoveries and new theory. Specifically, the methodology used in this research is based on Corbin and Strauss's Grounded Theory approach.

Theoretical Framework

Given the exploratory nature of qualitative research, it is necessary to review several bodies of relevant literature. There is debate among scholars related to the need for a theoretical framework in qualitative research, since qualitative research is used to develop theory itself. Corbin and Strauss (2008) pointed out that often times applying a theoretical framework in qualitative studies assists in the choice of methodology. This research explores organizational vision in the context of complex organizations; therefore, a theoretical framework is necessary to guide the methodology and model development. Additionally, the application of theory is useful for this study in the development of predetermined thematic categories used in several phases of this research. These predetermined categories are necessary, as they are used to collect data in a specific form which matches the research methodology.

Specifically, three bodies of literature serve to guide this research. First it is necessary to review perspectives of organizational vision, both theoretical and empirical in nature. Second, a review of literature framing organizations as complex dynamics is surveyed to set the stage for the role of vision in non-linear, bottom-up organizational dynamic. Third, a summary of a growing field of leadership literature, Complexity Leadership Theory (CLT) is applied and serves to model the flow of vision within an organization from a leadership perspective. The combination of these three perspectives serves as a lens which frames the questions explored in this research.

Vision in Organizations

Significant agreement about organizational vision exists in several decades of research on organizational vision. Vision was driven by the future, (Bennis & Nanus, 1985; Nanus, 1992; Kouzes & Posner, 1987; Quigley, 1994; Kotter, 1995; Conger, 1999), relevant throughout the life cycle of the organization (Nanus, 1992), specified direction (Conger and Kanungo, 1988; Strange and Mumford, 2002), traceable (Kotter, 1995), was realistic and grounded (Berson et. al, 2001), shared and central to the members of the organization (Nanus, 1992; Kirkpatrick and Locke, 1996; Tichy and Devanna, 1986; House and Shamir, 1993; Manaase, 1985; Quigley, 1994; Shamir, House and Arthur, 1993), composed of the values, beliefs and norms of the organization (Larwood et. al, 1995; Jacobsen and House, 2001), posed a mental model (Nanus, 1992; Bennis & Nanus, 1985; Kouzes & Posner, 1987; Conger, 1989), and emerged as an unexplained, unknown anomoly (Nanus, 1992; Strange and Mumford, 2002, 2005; Ellis, 2001; Kotter, 1995).

When an organizational conditions call for new vision, the leader serves as the change agent (Nanus, 1992), one that is constantly learning (Manaase, 1985). Scholars have agreed that the leader is not necessarily one of position power or determined by hierarchical structure (Kotter, 1995), but is often a role that emerges at the hands of coordinated interactive activities (Mumford, Feldman, Hein & Nago, 2001; Strange & Mumford, 2002) and driven by the dynamic and creativity (Manaase, 1985) of the organization (Quigley, 1994).

Vision, as a topic in leadership theory, was applied in many different contexts. One stance was that vision is a component of leadership theory, notably charismatic leadership theory (Bass, 1990; Conger and Kanungo, 1998; Conger, 1999). Other scholars argued that vision is a stand-alone concept, one that is independent of charisma (Kirkpatrick and Locke, 1996; Amalweh and Gardner, 2001; Strange and Mumford, 2002; Khatari, Ng and Lee, 2001; Amelweh and Gardner, 2001).

Empirical works suggested the positive effects of vision, notably satisfaction of employees and customers (Testa, 1999; Kantabutra and Avery, 2006), employee and customer emotional commitment (Kantabutra and Avery, 2006), employee motivation (Khatri, Ng and Lee, 2001), perceived leadership effectiveness (Groves, 2006) and overall organizational performance (Kotter and Heskett, 1992).

Organizations as Complex Dynamic Networks

Complexity science is the derivative of six research traditions: (a) boundaries and feedback loops, (b) theoretical biology, (c) nonlinear dynamical systems, (d) graph

theory, (e) phase transitions theory, and (f) Complex Adaptive Systems (CAS) theory (Goldstein, 2008). Through the blend of these theories emerges the concept that organizations are ever changing, intelligent and adaptive (Carley, 1999).

Complexity theory is summarized as "non-linear; emergent change; interaction and interdependency; unpredictability; autocalytic behavior; and dynamic movement" (Marion, 2008, pg. 1). Many leadership theories focus on the leader as the central agent in organizational behaviors, which suggests that outcomes were products of linear cause-effect processes (Hanson, 2009), but leadership and organizations were too complex to be fixed by static, linear approximations. Given this context, the body of the organization is viewed as dynamic rather than static, primarily comprised of agents who are both interactive and interdependent. Interaction permits the flow of information within the network while interdependency stresses action with respect to the flow of information (Uhl-Bien, Marion and McKelvey, 2007). The results of interaction and interdependence were emergence (Lichtenstein et. al, 2006; Marion, 2008; Uhl-Bien, Marion and McKelvey, 2007). The processes that generate these outcomes were referred to as mechanisms (Marion, 2008) and their emergent products manifest in the form of creativity, learning and adaptability (Kilduff, Cross and Tsai, 2008; Marion, 2008; Schrieber and Carley, 2008). Within a complex network, Complex Adaptive Systems serve as the most basic unit of analysis (Uhl-Bien, Marion and McKelvey, 2007).

Complexity Leadership Theory

Complexity leadership theory (CLT) is a new approach to leadership which applies both formal and informal processes (Marion & Uhl-Bien, 2010). Marion and Uhl-Bien (2010) contend that although the respective language of their theoretical framework is new, the concepts of informal organization and emergent leadership are historical in nature. Within this framework, leadership in a complex organization is not authoritative but rather an emergent interactive dynamic (Uhl-Bien, Marion & McKelvey, 2007), an outcome of relative interactions among agents within the organization (Lichtenstein et. al, 2006). In complexity leadership theory, leaders often lead without any level of authority and often temporarily (Schneider & Somers, 2006).

Uhl-Bien, Marion and McKelvey (2007) proposed several notions that are critical within a CLT framework. First, the Complex Adaptive System serves to stimulate interactions and interdependencies of agents rather than mediate or moderate. Second, CLT is an emergent and interactive dynamic, thus one must differentiate leaders (individuals who serve a role) from leadership (a function). Leaders behave with respect to their relative influence within the dynamic. Third, while it is necessary to have some level of format acts, notably to structure activities to allow for emergent outcomes, CLT serves to distinguish leadership from managerial roles, Last, CLT manifests according to adaptive changes rather than technical changes. Adaptive change invokes creativity, and more importantly, new knowledge, while technical change utilizes existing knowledge.

More specifically, complexity leadership theory proposes three key leadership roles: (a) administrative leadership, (b) adaptive leadership and (c) enabling leadership.

Administrative leadership denotes a formal role that seeks to exploit the organization through coordination and standardization of behavior (Marion & Uhl-Bien, in press).

Adaptive leadership is action based, and relates to how agents adapt to tension. Further, as discussed previously, leadership in the adaptive sense means that a leader can be anyone within the organization, not necessarily one related to authority. The informal leader, in this sense, motivates individuals to create new opportunity and solve problems.

Enabling leadership has two primary roles. The first is to enable effective conditions for CAS dynamics which catalyze adaptive leadership and emergence. By enabling conditions, a catalyzation occurs. Catalyzations web together context and mechanisms, enabling interaction, interdependency, and applying tension when necessary (Uhl-Bien, Marion & McKelvey, 2007). Through this catalyzation, adaptive leadership and administrative leadership can co-exist.

Data Collection and Analysis

Data was collected at a mid-size, 4-year public degree granting university in the southeastern United States. The sample chosen was composed of the presidential leadership members of the fraternity and sorority organizations, which collaboratively form the Greek life leadership organization. The Greek Life population is composed of 20 fraternity presidents, 11 sorority presidents, the Interfraternity Council president and the Panhellenic Council president. It is worth noting the Pan-hellenic Council was not considered for this study, since it was evident by the researcher and interview participants that the components of Pan-Hellenic organizations did not match the complex

organization of the Interfraternity Council and the Panhellenic Council. This research was conducted in three phases: (a) a structured interview for base-level information, (b) a survey of interactive relationships, and (c) Dynamic Network Analysis modeling and simulation process.

The first phase was a structured interview distributed to opt-in participants in the Greek leadership community. These interviews served to collect data for the purpose of developing the questionnaire. The structured interview was designed so that each participant saw the same questions in the same order, which allowed for proper coding of responses. Once the structured interview data was collected, the data was coded into meaningful categories applying Corbin and Strauss's (2008) recommended coding methods. In this phase, two types of coding were applied: open and axial coding. Open coding breaks the data apart and building properties among concepts while axial coding allows for the cross connection and relational development of like concepts (Corbin and Strauss, 2008). The usage of coded concepts allowed for the development of the survey of relationships, which was the second phase of this research. Once the interview responses were coded accordingly, the questionnaire was developed by applying the coded concepts within each thematic category. The questionnaire was developed using an online survey tool and distributed to the population of Greek leadership. The third phase applied the responses from the questionnaire for further study using the Dynamic Network Analysis methodology. Data was imported and managed into the Organizational Risk Analyzer (ORA) software package where the selective coding process occurred. Selective coding is the process of building centralized themes and explaining thematic

relationships. Dynamic Network Analysis was utilized to capture an understanding of the existing organizational dynamic and to analyze the changes in the dynamic over time using simulations.

Limitations

Much of the foundation of Complexity Leadership Theory relies on the idea that emergence of outcomes is unpredictable (Marion, 2008). Logically, given the complex nature of agents and the ever adapting behavior of organizations, it is deemed difficult, if not impossible to predict outcomes. These computational models should serve in the development of organizational theory, suggesting further need to test hypotheses of theories generated by these models. Carley and Frantz (2009) suggested that "the mere complexity of the human dimension, coupled with the difficulty in controlling real-world experiments and actual situations makes the challenge practically insurmountable" (pg. 729).

Second, this study lacks a longitudinal explanation of emergent outcomes. Methods to effectively measure emergent outcomes require time, financial resources and risk certain ethical limitations. This study utilizes and measures the parameters of a leadership dynamic environment at a specific time period. The simulations conducted in this study assumed the existing parameters allotted by the participants, and did not allow for adaptive error like those that in real-world situations.

Additionally, another limitation in this study is that the researcher's perceptions of their environment may be notably different than the actual conditions. While participants

list those to which they most commonly interact with, a more accurate depiction of agent interaction would involve adding researcher environmental observations, as this study did not invite this method.

Organization of the Study

This study is composed of five chapters. Chapter one identifies the research problem, the purpose of the research, introduces the theoretical framework and previews the methods of research design, data collection and analysis. Chapter two serves as an extensive and exhaustive review of relevant literature focused on vision in organizations, organizations as complex dynamic networks and Complexity Leadership Theory. Chapter three explains how the method for which the inquiry will be answered. This chapter will further elaborate on the methods of research design, data collection, data analysis, and model development. Specifically, this chapter explains the composition and practical application of Grounded Theory and Dynamic Network Analysis. Chapter four will present the findings of the study. Chapter five will present a model of vision in complex organizations, as well as conclusions and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

The goal of this chapter is to acquire a greater understanding of the theoretical literature related to the topics of organizational vision and complexity theory, specifically connected to leadership within organizations. The majority of literature throughout this chapter is theoretical in nature, and multiple empirical studies are included to shed further light on relevant concepts within the framework of this study. This chapter reviews three areas of theoretical and supporting empirical literature: (a) vision in organizations, (b) organizations as complex dynamics, and (c) complexity theory and its applications to leadership within organizations (identified as complexity leadership theory or CLT).

The term "vision" is a very broad term in relation to organizations. The research reported in this review focuses on vision in leadership and organizations, exploring common definitions of vision, components of vision, and perceived challenges for the emergence of vision. Empirical studies serve to support arguments of the role and significance of vision within organizations, as well to propose visions' role within leadership theory.

The theory of complexity is a relatively new dynamic application to leadership, one that is difficult to practically model or test, even with the breadth of descriptions offered by scholars of organization science and leadership (Schneider & Somers, 2006). Given the limited resources related to applications of complexity leadership, a deeper dive into the foundations of complexity science is necessary. Through the breadth of new research related to complex leadership, little has been suggested about the context of

vision within organizations. The conclusion of this chapter serves to connect the two concepts by interweaving the cohesive components.

Vision in Organizations

Vision is a widely studied topic which dates back to early history. Quigley (1994) referenced the application of vision by ancient religious figures, such as Buddha, Moses, Jesus Christ and Mohammed. Interestingly, the visions of these religious leaders influence their followers today, suggesting that vision, in many instances, is timeless. These figures in religion possessed one common trait – the hope that their teachings would live on in the future, and grow at the hands of their followers.

The term "vision" was defined in multiple ways by scholars and practitioners, many of whom agree that vision is overarching framework for social behavior. Nanus (1992) adopted a simple definition, suggesting, "Vision is a realistic, credible, attractive future for your organization" (p. 3). From an organizational perspective, a vision was a statement with values and goals aspiring to a better future that appeal to the hearts and minds of followers (Quigley, 1994). Dowd (2006) believed "visions are standards of excellence, expressions of hope and optimism, and leaders enlist others in a common vision by appealing to values and interests" (p. 63).

Vision was not only beneficial, it was necessary for an organization's survival. Kotter (1995) suggested that, of eight primary reasons why organizations fail, three solely related to organizational vision. Manaase (1985) called vision "essential, often THE essential quality of leaders" (p. 150). Nanus (1992) believed that there is 'no more

powerful engine driving an organization toward excellence and long-range success than an attractive, worthwhile and achievable vision of the future, widely shared" (p. 3). Bennis (1989) posed that vision is the "first basic ingredient of leadership" in which a "leader has a clear idea of what he wants to do…and the strength to persist in the face of setbacks, even failures" (p.96). Simply, vision motivated all employees, including those who believed a different approach would be better (Van den Steen, 2005).

Components of Vision

Organizational scholars posed several important characteristics of vision. First, vision reflected the future (Bennis & Nanus, 1985; Nanus, 1992; Kouzes & Posner, 1987; Quigley, 1994; Kotter, 1995; Conger, 1999). Not only was vision important to the inception of an organization, it was critical to apply it throughout the lifecycle of the organization (Nanus, 1992). Kotter (1995) proposed that "every successful transformation develops a picture for the future that is relatively easy to communicate and applies to customers, stockholders and employees" (p. 63). Quigley suggested that vision offers a "roadmap" to the future (p. 37). Manaase (1985) proposed vision as a "development, transmission, and implementation of an image of a desirable future" (p. 150).

Second, visionary leaders specified direction (Conger & Kanungo, 1988; Strange & Mumford, 2002), one that followers used to clearly track their progress (Kotter, 1995). In creating a future orientation for the organization, a vision communicated what an organization should become (Kotter, 1990) while being realistic and grounded (Berson et

al, 2001). Berson et. al (2001) argued that "simply articulating an audacious vision may not energize followers to higher levels of effort and performance – if the vision is not grounded at some level, followers may view it as unrealistic" (p. 67).

Third, vision was a mental model (Nanus, 1992; Bennis & Nanus, 1985; Kouzes & Posner, 1987; Conger, 1989), suggesting that vision created a visual image for an organization revolving around excellence in the future (Kouzes and Posner, 1987). Conger (1989) also believed that vision was a mental image, which a leader used to develop a future that is ideal for an organization.

Fourth, vision was a strategic component of organizational growth. Quigley (1994) believed vision is a key attribute and an important skill for formulating strategy, and drew a connection between a leader's power as the "capacity to translate a vision and supporting values into reality and sustain them" (p. 39). Although organizational change focused largely on operations, only vision and strategy dictated which operations mattered and the degree of which they mattered (Quigley, 1994).

Fifth, vision was a dynamic, emergent and evolving process for an organization. Nanus (1992) believed that vision interacts with tasks in an organization. However, comparing a common task to vision is insufficient, because vision often calls for new tasks and roles in addition to common tasks, both of which have tendencies to change over time. Thus, vision was a dynamic process that evolves and grows with the organization. A static application to vision suggested an outcomes-based approach measured by a success or failure, while vision adapted to change within the organization.

Additionally, vision was shared by organizational members. Tichy and Devanna (1986) suggested that in order to motivate followers, an organization's vision must create a purpose shared by members of the organization. Within an organization, vision was a goal that is shared among followers (House & Shamir, 1993; Nanus, 1992; Kirkpatrick & Locke, 1996). Vision enabled the members of the organization to define roles and activities that ultimately allowed the organization to evolve (Manaase, 1985). Vision must also be a large part of building organizational identity (Shamir, House & Arthur, 1993), one that is composed of the members of the organization (Nanus, 1992). Assuming that an organization is a body composed of its members, vision should be specific to those members. Embedding the shared organizational beliefs allowed vision to serve as a basis for norms (Jacobsen & House, 2001). Vision was based on values that are personal and professional, allowed for an image of possibility, and enabled agents to make a personal assessment of a situation (Manaase, 1985).

A unique aspect of vision was the phenomenon of its creation. Many leaders had difficulty describing how they arrived at vision (Nanus, 1992). Strange and Mumford (2002, 2005) suggested that vision arose as a result of an experience within a social system. Historic studies suggested that, when leaders described the root of vision creation, often leaders believe it emerges from past experience (Ellis, 2001). Self-reflection aided in the development of leadership skills (Strange & Mumford, 2002), thus self-reflection may have catalyzed ideas from visionary leaders. Kotter (1995) reflected that vision creation often comes from a single person and is a raw idea initially. It is only

when a coalition of individuals worked at the vision that something unique and effective emerged, most often due to analytic thinking and processing.

While vision may emerge at the hands of a top level leader, vision is driven by the dynamics of the organization (Quigley, 1994), often in informal settings (Kotter, 1995). These informal settings, such as the coordination and integration of activities are enabled by the presence of vision itself (Mumford, Feldman, Hein & Nago, 2001; Strange & Mumford, 2002), and often utilize the creativity (Manaase, 1985) and expertise (Kotter, 1995) of the individuals within the organization. Since vision evolves at the hands of the workplace dynamic, "vision should be open ended, allowing the questions related to the vision to be answered through the stimulation of members within the organization" (Quigley, 1994, p. 40).

In summary, vision was a futuristic mental model, composed of the shared beliefs, values and identity of the members of the organization, which allowed for vision to evolve. This aids in paving the usage of vision from a complexity perspective.

Challenges for Vision

While vision did direct and motivate behavior within organizations, it did not guarantee desirable social outcomes (Strange & Mumford, 2002). Vision was needed when there was evidence of confused purpose, employees were not challenged, the organization lost legitimacy, and when the organization was behind the time. Additionally, it was necessary when pride and morale was low, subordinates were unwilling to accept ownership and responsibility for new projects or change, an absence

of shared progress existed, management lacked respect and when an influx of rumor-mill communication occurred (Nanus, 1992).

Organizational complexity. First, organizations were complex, thus the vision for an organization was equally complex (Nanus, 1992; Kotter, 1995; Conger, 1999). Amalweh and Garner (1999) believed that "organizational systems, activities and events are hard to comprehend because they were ambiguous and complex, yet members of organizations have a need to make sense of their environment" (p. 351). As organizations were complex, so were the members that served as the body of the organizations identity. Members of organizations had different dynamics of voice. These voices were often those of highly relevant figures within the organization (Nanus, 1992). Complex organizations were composed of high volumes of information coupled with rampant uncertainty of outcomes (Marion, 1999). A vision which is equally complex as the organization itself can evolve from the potential of positive growth to a complicated set of tasks which ultimately take the organization in the wrong direction (Kotter, 1995).

Second, communicating a vision was very difficult. Kotter (1995) challenged complicated vision simply and practically, suggesting that "If you cannot communicate a vision minutes or less and get a reaction that signifies both understanding and interest, you are not yet done with this phase of the transformational process" (p 63).

Third, vision was only effective if followers committed (Avery, 2004). Vision often required sacrifices, which could be volatile to an organization if members did not commit. Kotter (1995) argued that transformation is impossible if members of an organization cannot understand the purpose of sacrifices. Other common risks occurred

when a strategic plan was enacted by a leader to inspire action in followers. Strategic planning often resulted in people choosing between the new vision and their personal interest (Kotter, 1995). Additionally, ideas that were unique and creative that go unrewarded can create dissention amongst members in organizations (Kotter, 1995).

Kotter offered several other considerations for vision. When transformation of an organization succeeded, the dynamic among leadership evolved, but if success was not imminent in the early stages of the vision process, ultimately, nothing effective emerged (Kotter, 1995). Additionally, obstacles were evident, and proved to be very difficult to remove if the obstacle is a human agent given their ability to influence others.

Vision and Leadership Theory

Vision was often at the forefront of leadership theory. Many scholars applied vision as a component of leadership while others argued that vision should be treated as a separate entity all together. The most common theory which links vision was that of charismatic leadership. Scholars that view vision as a component of charismatic leadership related the two due to popular historic figures possessing both (Conger, 1990).

For roughly a decade, vision was cast through several different lenses of leadership theory. Bass (1990) applied vision as a component of inspiration as opposed to a charismatic leadership component. Conger and Kanungo (1998) inputted vision into a charismatic leadership framework, as a driver of inspiration: "Charismatic leadership is defined as a social influence process that involves the formulation and articulation of an evocative vision, provides inspiration and motivation of collective action, demonstrates

sensitivity to environmental trends and displays unconventional and personal risk-taking behavior" (p. 136). Contrary to both approaches, Kirkpatrick and Locke (1996) posed charisma and vision as two separate components, placing them on different theoretical dimensions. Several relevant empirical studies emerged in the last decade that examines these different theoretical stances.

Sosik and Dinger (2007) examined three personal attributes of leaders, which influenced relationships between leadership style and thematic content in vision context. The researchers applied two themes of vision content to participants: inspirational and instrumental, and tested their relationships with charismatic and contingent-reward leadership theories. Their results showed that charismatic leadership was positively related to inspirational vision themes and negatively related to instrumental vision themes. Counter to these findings, contingent reward leadership was positively related to instrumental themes and negatively related to inspirational themes. Summarily, different vision contexts related to different leadership styles.

Amalweh and Gardner (2001) explored the combined effects of vision content and delivery related to perceptions of leader charisma and effectiveness. The researchers framed vision in two phases: creation of vision and communication of vision to followers. Findings showed that leader speeches that applied visionary context resulted in high levels of leader charisma and effectiveness. But, these findings did not dictate that, in order to be an effective, a leader must be charismatic.

Strange and Mumford (2002) posed two sides of a vision based leader. The first was the ideological leader: those which developed and created vision through personal

values, standards; the resulting vision manifests as a result of these values. The second leadership style reacted to a perceived need for social change. These were defined as charismatic leaders. Given presence of contradictory behavioral differences, this implied two different types of leadership styles. Vision in the first context was evolutionary, while the second context was reactionary.

Groves (2006) studied the effects of emotional expression in leadership, a common trait among charismatic leaders. Although emotional expressivity shared a strong relationship with perceived leadership effectiveness, when coupled with visionary leadership, it did not show significant effects of organizational change magnitude. Groves suggested that, with low levels of visionary leadership, high leader emotion may inhibit organizational change. Therefore, leaders without a visionary message were unlikely to produce significant changes within organizations. This suggested a need for understanding the two concepts independently.

Perhaps the strongest argument in distinguishing vision from leadership theory was that of Khatari, Ng and Lee (2001), who hypothesized that charisma and vision are two independent concepts. The authors contended that charismatic leadership theories defined charisma to include attributes of vision, while visionary leadership applied attributes of charisma. Subsequently, a greater understanding about the two concepts can emerge when they are studied independently. Their findings showed that there were two dimensions to leadership: the socially sensitive and charismatic traits, and the expertise/analytical and visionary orientation. These results were shown through the emergence of four factors, two related to charismatic leaders and two related to

visionaries. The researchers showed that job satisfaction and commitment related to both features of charismatic and visionary leaders, but performance and output was only significantly related to visionary leadership traits, suggesting that effective leaders utilized vision independent of charisma.

Relevance to this research. This study posed that vision is an independent component from charisma. Charisma is viewed as emotionally based, while vision was a direction. This research seeks to understand outcomes and effectiveness. Support is consistent that vision is a driver of effective outcomes. Charisma is shown to inspire and motivate, but in the context of this research, there is little evidence to suggest charisma produces effective outcomes.

Effects of Vision – Empirical Support

Several empirical studies pointed to the significant positive effects of vision. Testa (1999) showed that organizational stakeholder attitude towards an organizations' vision was significantly correlated with both job satisfaction and perceived efforts in providing quality service to customers. Khatari, Ng and Lee (2001) showed that motivation related significantly to traits of visionary leaders and futuristic organizational goals. Groves (2006) showed that vision in leadership was associated with follower ratings of leadership effectiveness. Kotter and Heskett (1992) empirically illustrated that companies in which organizational members shared values outperformed other firms by large margins. Additionally, performance of individuals aligned with the organizations vision, and without vision, competitive performance suffered over time (Kotter &

Heskett, 1992). Kirkpatrick and Locke (1996) tested vision by manipulating different contexts of vision (vision vs. no vision) within the communication of organizational goals. Vision resulted in increased follower trust in the leader, as well as positive alignment with leader/follower beliefs and attitudes. Thus, vision motivated followers to increase performance because of enhanced self-efficacy and goal development.

Understanding follower effects was increasingly important given the difficulty of gaining commitment in vision (Kantabutra & Avery, 2006), as vision was only effective if followers committed (Avery, 2004). A follower's positive connection with vision stimulated an improved commitment to the organization as well as heightened job performance (Nanus, 1992; Kirkpatrick & Locke, 1996). Once the followers bought into vision, they then joined a leader in turning the vision into reality (Manaase, 1985).

Khantabutra and Avery (2006) studied follower effects of vision in department stores. Several key findings emerged. Overall, there was a significant association between overall customer and staff satisfaction with a store which utilizes a guiding vision. Additionally, emotional commitment to vision shared a significant relationship with staff and customer satisfaction. It was found that employees that applied the vision of their manager showed enhanced satisfaction, resulting in a visions' significant impact in job performance. Vision trickled down to customers also, as staff emotional commitment to vision shared a significant relationship with customer satisfaction.

Organizations as Complex Dynamic Networks

Foundations of Complexity Dynamics

Goldstein (2008) outlined complexity science as a derivative of six research traditions. The first was a systems thinking approach through the establishment of boundaries and feedback loops. The second was theoretical biology, which viewed organizations as systems that evolve. The third was nonlinear dynamical systems theory, which housed attractors, bifurcation and chaos. The fourth tradition, graph theory, mapped connectivity and networks. Phase transitions theory, the fifth tradition, allowed for emergence. Lastly is Complex Adaptive Systems theories, in which adaptive systems evolved at the hands of interactive agents.

Complexity Theory

Complexity theories are growing rapidly in academic literature (Burnes, 2005). Complexity theory in organizational science is a relatively new concept, although complexity science has been studied for many years. Schneider and Somers (2006) believe that complexity theory may be "more evolutionary than revolutionary," but scholar's ability to channel the theories applications makes complexity theory "more revolutionary than evolutionary" (p. 354). Marion (2008) summed up complexity theory in organizations as "characterized by non-linear, emergent change; interaction and inter-dependency; unpredictability; autocatalytic behavior; and dynamic movement" (p. 1). To apply a scientific analogy, complexity theorists argued that entities operate far from equilibrium and at the edge of chaos (McKelvey, 1999).

Complexity theory deals with interactive dynamics of aggregate agents, which generate events in the form of creativity, learning and adaptability, thus producing a resultant change within an organization (Kilduff, Cross & Tsai, 2008; Marion, 2008; Schrieber & Carley, 2008).These emergent events are referred to as mechanisms (Marion, 2008). The emergence of complexity derives from interactions of independent nodes rather than a pre-defined organizational leader (Kilduff, Cross & Tsai, 2008).

Marion (2008) contested that complex dynamics operate in processes: (a) interaction, (b) dynamic and (c) adaptation. Interaction invokes change in an organization due to relationships within organizations, those of agents, and their influence among each other to create the emergence of action (Marion, 2008). Dynamic is a process whereby things within an organization change and emerge over time. Applying complexity to organizations implies that organizations are non-linear and interactive (Marion, 2002). Adaptation is divided into two levels: individual and aggregate (Marion, 2008).

Complex Adaptive Systems

Complex Adaptive Systems (CAS) serves as the most basic form unit of analysis within complexity science (Uhl-Bien, Marion & McKelvey, 2007). CAS are composed of interdependent interacting agents within a dynamic united by necessary outcomes (Uhl-Bien, Marion & McKelvey, 2007). Burnes (2005) posed that "Complex adaptive systems theory, on the other hand, attempts to model the same phenomena by using an agent based approach. Instead of formulating rules for the whole population, it seeks to formulate rules of interaction for the individual entities making up a system or population

and from this explain the behavior of the population as a whole" (p. 79). Within CAS, interaction between agents is unpredictable, while change emerges from this interactive dynamic (Uhl-Bien, Marion & McKelvey, 2007). Lichtenstein et. al (2008) elaborated on Complex Adaptive Systems within organizations:

> A CAS is comprised of agents, individuals as well as groups of individuals, who "resonate" through sharing common interests, knowledge and/or goals due to their history of interaction and sharing of worldviews. Agents respond to both external pressures (from environment or from other CAS or agents, e.g., leaders) and internal pressures that are generated as the agents struggle with interdependency and resulting conflicting constraints (e.g., when the needs of one agent conflict with those of another). These tensions, when spread across a network of interactive and interdependent agents, generate system-wide emergent learnings, capabilities, innovations, and adaptability. Importantly, such elaborations are products of interactions among agents, rather than being "caused" by the specific acts of individuals described as leaders. (p. 3).

The Complex Network

Applying complexity to an organizational framework adopts principles from multiple disciplines. Simply, "organizations are constantly in a state of change in underlying social and organizational networks" (Carley, p. 3, 1999). Organizations are intelligent and adaptive (Carley, 1999). Carley (1999) suggested that organizations are an "ecology of networks" (p. 9). Networks have great influence, primarily related to

information diffusion. This influence is driven by networks, with respect to information's accuracy, quality, and the speed at which it travels within an organization (Carley, 1999). Given the magnitude of this power networks possess, changes within networks have consequential effects in the structures of social and organizational networks (Carley, 1999).

Entity based ties. Early work by Simmel (1950) and later contributions of Krackhardt (1998) examined the concept of Simmelian ties. Simply, Simmilean ties are the connections among individuals within social structures. Simmel (1950) was interested in the ties among social structures, and identified the differences between dyads and triads. He suggested that dyads within social structures are those with a single tie between two individuals. This structure within organizations suggested several issues for networks. First, a dyad has more individuality, thus more bargaining power within the dynamic, resulting in a lack of dynamic accountability. Second, conflict in any social or organizational structure is inevitable, and is resolved soundly in dynamics of greater than two ties (Simmel, 1950).

Krackhardt (1998) suggested that a social tie is strong when ties among two individuals are reciprocal and are strongly tied to each other if they are tied to at one least third-party which they share in common. Therefore, groups of three or larger result in the mass means of coordination, and conflict among these individuals is resolved at the hands of the collective dynamic.

Agents. Carley (1999) referred to agents within a network as a "computational entity that exists in an interaction-knowledge space, computational meaning these agents can acquire, process, store, interpret, or provide information regarding the connections among pieces of information" (p. 6). Given the ability humans possess to reposition themselves within networks, diffuse information and change the context of information, humans are then the ideal agent (Carley, 1999). Agents are attributed to intelligence, composed of cognitive capabilities and knowledge. Cognitive capabilities are the process by which agents handle information while knowledge is the information possessed by the agent (Carley, 1999).

Knowledge. As networks are driven by agents, agents are influenced by knowledge. Carley (1999) outlined knowledge in two pieces: the concepts of information and the connections among these concepts (p. 7). Carley and Hill (2001) posed that "while relationships provide the mechanism by which culture is communicated and adopted, the content of culture is the result of what individuals know" (p. 2). Additionally, "the content of culture, the pattern of basic assumptions which individuals use as a framework to interpret events and subsequently guide behavior motivates the consideration of "the what" in the learning process" (p. 2). Knowledge and learning are not solely related to individuals, but to networks and whole organizations. Given that organizations are composed of individuals that learn, in essence, the organization itself learns. Carley and Hill (2001) suggest that learning exista at both the organizational and individual level: "When organizations, as synthetic agents learn important organizational

behaviors emerge" (p. 8). Opportunities for organizations to grow are the result of systems that self-learn and self-organize (Kilduff, Crossland & Tsai, 2008).

Agents are driven by the concept of a mental-model. An agent's mental model is their set of concepts and the connections among them understood by the agent (Carley, p. 7, 1999). This mental model enables an agent to add or drop concepts, which result in changes of interaction. These mental models involve agents "perception of the knowledge network (who they think knows what), their perception of the social network (who they think interacts with who), task knowledge, knowledge of others both in particular and general, knowledge of norms, beliefs, customs" and other entities within the dynamic (Carley, p. 13, 1999).

Simply, agents cannot stop learning, because they are a product of their environment, one that fundamentally applies natural social exchanges between individuals (Carley, 1999). Carley (1999) outlined three forms of learning. The first was communication based, whereby individuals learn through tasks, people and other entities. Experiential learning was due to feedback and repetitive behavior. Expectation based learning involved individuals planning and thinking about the future (Carley, p. 12, 1999).

Carley and Hill (2001) suggested that the entire culture of an organization is knowledge based: "In essence then, what we want to suggest, is that when culture is viewed from a knowledge level perspective, all of these other characterizations of culture, norms, values, stories, goals, and ambience, are artifacts that emerge from the changing pattern of knowledge and interaction in the organization" (p. 3). Diversity plays a large

role in culture. Schrieber and Carley (2008) believed that a diverse set of knowledge is necessary for organizations, which formulates collective intelligence within an organization. Without diverse knowledge, learning is constrained.

Interaction and interdependency. Carley (1999) described interaction as the "primary defining social act" (p. 14). Given that actions performed by agents involve the dynamic of other agents, this phenomenon is considered interaction (Carley, 1999). Behavior of social, cultural and individual entities emerges at the hands of interactions (Carley, 1999).

It is important to note that a social network is not the same as a collection of individuals, as the network is interdependent, and the decisions and behaviors of one individual effect the decisions and actions of others within the network (Vollacher & Nowak, 2008). Within social networks, influence from other individuals plays a substantial role in the changes of individuals thoughts, feelings or behaviors (Vollacher & Nowak, 2008) which ultimately result in the change in an organization (Carley, 1999; Carley & Hill, 2001).

Uhl-Bien, Marion and McKelvey (2007) suggested that interaction within a network dynamic produce links within the network for which information can flow and connect. While interaction permits flow of information within a network dynamic, interdependency stresses action based on information (Uhl-Bien, Marion & McKelvey, 2007). Uhl-Bien, Marion and McKelvey (2007) pointed to the need for proper applications of interaction and interdependency, suggesting that historically, leaders

sought to solve problems and intervene in conflict when necessary. However, this leadership behavior creates a barrier for interdependency.

Emergence. The resultant phenomenon of interaction and interdependency is that of emergence (Lichtenstein et. al, 2006; Marion, 2008; Uhl-Bien, Marion & McKelvey, 2007). Leaders in complex organizations serve to enable and catalyze mechanisms by fostering conditions which allow for emergent events (Uhl-Bien, Marion & McKelvey, 2007). Schwandt (2008) sought to understand and explain the derivatives of emergence. He explained that "human action requires a situation with means and conditions to occur and an end goal, and it requires norms or values, both collective and individual which drives meaning related to the end to the situation," (p. 105). This embodies the idea that individuals are free to make choices, resulting in heavy influence by the social structure of their network, both past and present. Emergence, as expected, is sudden and unpredictable, and is generated by the dynamic of agents rather than the behaviors of individual agents (Marion, 2008).

Uhl-Bien, Marion and McKelvey (2007) argued that emergence involves two independent mechanisms. The first was the reformulation of current fundamentals that produce outcomes, while the second was the concept of self-organization. Marion and Uhl-Bien (2001) related the concepts of microdynamics and macro-dynamics. Microdynamics "represent the bottomup behaviors that occur when individuals interact, leading to both coordinated behavior and random behavior" (p. 392). Macrodynamics "represent the emergence of the larger systems from the interactions at the microlevel" (p. 392).

The second was creative change, which is a unique result of emergence. Creative change was composed of innovative ideas, new solutions to organizational problems and a new understanding of ideas (Marion, 2008). Marion and Uhl-Bien (2001) suggested that "complex leaders understand that the best innovations, structures, and solutions to problems are not necessarily those that they, with their limited wisdom, ordain, but those that emerge when interacting aggregates work through issues" (p. 394). It is then important for a leader to understand how this knowledge develops as a result of the interactions between agents.

Complexity Leadership Theory

Complexity Leadership Theory (CLT) offers a perspective of leadership study which applies a framework of complex adaptive systems (Lichtenstein et. al, 2006). Within this framework, leadership within a complex organization is not authoritative, but rather an emergent interactive dynamic (Uhl-Bien, Marion & McKelvey, 2007), an outcome of relative interactions among agents within the organization (Lichtenstein et. al, 2006). These outcomes are in the form of creativity, learning and adaptability (Uhl-Bien, Marion & McKelvey, 2007; Schrieber & Carley, 2008).

Leadership in CLT is indirect and catalytic (Schneider & Somers, 2006). Leaders often lead without any level of authority and often temporarily (Schneider & Somers, 2006). Schneider and Somers (2006) argued that informal leadership in CLT emerged, and often times in many different forms. Many times, leaders did not know they are the

leader, nor do others, while others may assume the role or initiate the role themselves (Schneider & Somers, 2006).

Marion and Uhl-Bien (2001) suggested a microlevel approach to organizations regarding leadership:

> "Complex leadership" involves creating the conditions that enable productive, but largely unspecified, future states. This suggestion recognizes that leaders cannot control the future (e.g., determinism) because in complex systems such as organizations, unpredictable (and sometimes unexplainable) internal dynamics will influence networks, creating atmospheres for formulation of aggregates and meta-aggregates (e.g., the emergent structure concepts of complexity theory to be discussed below) in ways that permit innovation and dissemination of innovations so critical for "fitness" of the firm. (p. 391).

Uhl-Bien, Marion and McKelvey (2007) proposed several critical components of CLT to help understand the framework. First, CAS serves to stimulate interactions and interdependencies of agents rather than to mediate or moderate them. Second, as CLT is an emergent and interactive dynamic, in theory, it must differentiate leaders from leadership. Within this framework, leaders behave with respect to their influence of the dynamic. Third, CLT serves to distinguish leadership from managerial titles, though there is the presence of formal acts to structure activities. Last, CLT manifests according to adaptive changes rather than technical changes. Adaptive change invokes creativity, and more importantly, new knowledge, while technical change utilizes existing knowledge.

The three components of CLT are administrative leadership (which has also been referred to as managerial leadership; see Schrieber, 2006), enabling leadership and adaptive leadership (Uhl-Bien, Marion & McKelvey, 2007).

Administrative leadership. While CAS seeks to foster dynamics within a CAS, there is a necessity for a control structure for the purpose of producing outcomes aligned with the mission and vision of the organization (Lichtenstein et. al, 2006; Uhl-Bien, Marion & McKelvey, 2007). Administrative leadership is the most common form of leadership, which is grounded by authority, hierarchy and a path of control within an organization (Uhl-Bien, Marion & McKelvey, 2007). Administrative leadership denotes a formal nature, and agents assume managerial roles to plan and coordinate activities. Uhl-Bien, Marion and McKelvey (2007) suggested that administrative leadership can align with adaptation, while adaptation can serve to support initiatives. Marion and Uhl-Bien (2001) alluded to administrative leadership in similar context by arguing that "part of the role of the leaders may involve exerting interpersonal influence (e.g., relationship-oriented behavior), but part of it may not" (p. 394).

While agents can serve to support administrative leadership, they can also serve to hinder administrative leadership. Agents who disagree with the administrative roles can often act independent of their respective leadership (Uhl-Bien, Marion & McKelvey, 2007). This alludes to the need for balance of leadership styles within the CLT framework. Administrative leaders should strive to focus their efforts on the planning and coordination of creative opportunities for which adaptation occurs. Additionally, they should manage the resources necessary to facilitate adaptation (Uhl-Bien, Marion &

McKelvey, 2007). While the decisions of the organization may lie within the authority, authority should enable creativity, learning and adaptability in order to influence change within an organization (Uhl-Bien, Marion & McKelvey, 2007).

Adaptive leadership. Uhl-Bien, Marion and McKelvey (2007) defined adaptive leadership as "emergent change behaviors under conditions of interaction, interdependence, asymmetric information, complex network dynamics, and tension." Additionally, "adaptive leadership manifests in CAS and interactions among agents rather than in individuals, and is recognizable when it has significance and impact" (Uhl-Bien, Marion & McKelvey, p. 204, 2008). Lichtenstein et. al (2006) defined adaptive leadership as "as an interactive event in which knowledge, action preferences, and behaviors change, thereby provoking an organization to become more adaptive" (p. 3).

Much of this chapter has examined the concept of emergence within organizations. Adaptive leadership relies on emergence to invoke change within an organization (Uhl-Bien, Marion & McKelvey, 2007). Adaptive change is the result of existing ideas that are not compatible within the dynamic of the organization, thus change evolves into new knowledge and ideas (Uhl-Bien, Marion & McKelvey, 2007). Adaptive leadership is purely action based, and related to how agents adapt to tension. Learning, creative and adaptive actions which emerge are informal within the dynamic of the organization (Uhl-Bien, Marion & McKelvey, 2007).

Further, leadership in the adaptive sense means that a leader can be anyone within the organization, not necessarily one related to authority. A leader, in this sense, motivates individuals to create new opportunity and solve problems. Organizations that

adopt cultures of adaptation directly affect organizational performance in a positive manner. In this framework, the leader plays a key role in change (Kotter & Heskett, 1992). Thus, the leader plays the role of the "change agent" (Nanus, 1992). Marion and Uhl-Bien (2001) believed that, for leaders to be effective, they must learn how to manage and develop networks.

Enabling leadership. Enabling leadership serves to create environmental conditions for which agents within a CAS can develop create solutions to problems, learning and adaptability (Uhl-Bien, Marion & McKelvey, 2007). As discussed previous, context are features that influence the nature of the mechanisms dynamic, while mechanisms are the interactions of agents producing a resultant change (Uhl-Bien, Marion & McKelvey, 2007). Enabling leadership seeks to foster context in ways that catalyze adaptive leadership, thus formulating emergence (Uhl-Bien, Marion & McKelvey, 2007).

Enabling leadership has two primary roles. The first is to enable effective conditions for CAS dynamics which catalyze adaptive leadership and emergence. By enabling conditions, a catalyzation occurs. Catalyzations web together context and mechanisms, enabling interaction, interdependency, and applying tension when necessary (Uhl-Bien, Marion & McKelvey, 2007). Through this catalyzation, adaptive leadership and administrative leadership can co-exist. Van Velsor (2008) spoke to the development of leadership as "a catalyst and a 'practice field' for interdependent dynamics, creating a context for further connection and interaction across the organizations" (p. 337).

Second, complex leaders manage entanglement between the administrative and adaptive leadership concepts. Uhl-Bien, Marion and McKelvey (2007) discussed entanglement, which served as the enabling conditions that foster actions within the organization where creativity is necessary. This idea consisted of managing the conditions of adaptive leadership while promoting the results of adaptive leadership through the formal structures of administrative leadership (Uhl-Bien, Marion & McKelvey, 2007).

Uhl-Bien, Marion and McKelvey (2007) described a process of enabling emergence through the usage of tension. Tension serves to informally invoke actions (Uhl-Bien, Marion & McKelvey, 2007) and under proper condition, realign cognitive maps (Lichtenstein et. al, 2006). Tension, in this context, can refer to ideas or information, new people or the application of new or existing resources. The result of this tension is the emergence of creativity. This enabling of agent emergence shifts agents from relying on authority to solve problems independently (Uhl-Bien, Marion & McKelvey, 2007).

Summary

Much of this chapter has reviewed organizational vision from an entity based approach, primarily from hierarchical leader level. Entity based scholars suggest vision is created, communicated, and administered from the top down. From an entity based perspective, the concept of vision has changed very little, while the same risks for organizations still exist.

This chapter also describes a leadership theory which employs the use of informal network dynamics. Complexity Leadership Theory discards claims that leadership is a function of individuals in formal settings. Rather, leadership emerges through informal interactions from a collective network dynamic. From a complexity perspective, vision is the result of the interactions and interdependencies of work-related agents which allow for emergent events resulting in creativity, learning and adaptability. This research explores vision from the perspective of a complex organization by applying a new social and organizational paradigm. The research methods chosen embrace the assumptions and components which marry vision and the complex organization.

CHAPTER THREE

RESEARCH DESIGN

The purpose of this research is to develop an understanding of how the interactions and interdependencies of entities influence organizational vision over time. The design of this research seeks to explore the interactions of individuals, their beliefs and concerns for their organization and Greek life as a whole, as well as their knowledge, tasks, resources and locations which they have access.

This chapter revisits the research questions introduced in chapter 1, poses the argument for the usage of qualitative inquiry, and reviews the components of Grounded Theory methodology. Additionally, the Dynamic Network Analysis methodology is explained with support to its successful partnership with Grounded Theory applications. Next, it details the research design and methodology, with descriptions of the data collection and analysis methods as well as other considerations relevant to qualitative research.

This research is guided by the question: How does organizational vision interact with networked interdependency among organizational agents (people, resources, knowledge and roles) to influence leader-related beliefs and task performance? To support this question, the following questions are posed:

1. What distinct groupings related to the organizations' vision exist within the dynamic network?
2. How does social and relational influence and knowledge interaction impact the beliefs of agents within an organization?

3. How would the organizations' vision change conditioned on the removal of internal and external pressures, organizational concerns and perceived obstacles?
4. Which pattern of vision (uniform or fragmented) is most effective for organizational learning and task performance?

These questions were explored through qualitative inquiry under the theoretical lens of Complexity Leadership Theory.

Setting

Creswell (2009) argued that "qualitative research occurs in natural settings where human behavior and events occur, the data that emerges is descriptive, the focus is on participant's perceptions and experiences, focuses on processes as well as outcomes" (p. 196). This study takes place at a mid-sized 4-year public degree granting university in the southeastern United States. The population studied is that of the university Greek Life leadership. The Greek Community is comprised of 11 Panhellenic sororities and 20 Inter-fraternity council (IFC) fraternities. Greek life membership is approximately 20% of the university undergraduate student population (Department of Fraternity and Sorority Life, 2011).

This study focused on the dynamic of social Greek fraternities and sororities due to the governance structure of social Greek organizations. Since this research was conducted under the lens of Complexity Leadership Theory (CLT), it was necessary to choose individuals and organizations with patterns of interaction and interdependency. It

is not uncommon for a member of a social Greek organization to also be a member of an additional Greek organization (example: honorary fraternity), but honorary fraternities are not governed under IFC and Panhellenic bodies.

The Argument for Qualitative Research

Corbin and Strauss (2008) suggested that the world itself is complex and that happenings are the result of many factors which interact, often times in unforeseen circumstances. They concluded that "any methodology that attempts to understand experience and explain situations will have to be complex" (p. 8). Qualitative research has many purposes, but the primary reason for selecting it is to enter the world that participants face and to see the world from their perspective. Qualitative studies are based on research questions which leave the opportunity for the emergence of happenings within the frame of the study. By applying this reasoning, discoveries can be made which will allow for further conversation and the development of empirical knowledge (Corbin & Strauss, 2008, pg. 16).

As discussed in Chapter One, much conceptual understanding of organizational vision has reached a point of saturation. The current views on vision are fairly universal and consistent. Although vision has been studied in great detail, much is still left to be understood, therefore, a new approach may be necessary continue the conversation. The elusiveness and seemingly unknowns of vision call for a method which is exploratory, allowing for new discoveries. The result of this approach is new theory and a

reconstructed understanding. This research implores the application of two methods: Grounded Theory and Dynamic Network Analysis.

Grounded Theory

The foundations of Grounded Theory research originate from the propositions of Glaser and Strauss (1967) who offered suggestions of developing theory through qualitative data (Corbin and Strauss, 2008). Grounded theory is a strategy of inquiry in which the researcher derives a general, abstract theory of a process, action or interaction grounded in the views of participants (Creswell, 2009). Two primary characteristics exist in Grounded Theory research: (a) the ongoing comparison of data with emerging categories and (b) theoretical sampling of different groups, thus maximizing the similarities and differences of data (Creswell, 2009, p. 13).

Corbin and Strauss (2008) suggested that theoretical sampling is a method of data collection of concepts derived from data. Theoretical sampling utilizes responsiveness to the data rather than predetermined sampling methods. This responsive approach makes the sampling open and flexible. Concepts are derived from data during analysis and questions about those concepts drive the next round of data collection. Theoretical sampling is concept driven and it enables the researchers to discover the relevant concepts with respect to the problem and the population (Corbin and Strauss, 2008). In typical theoretical sampling, the researcher takes the data collection process one step at a time, first by gathering data followed by analysis, which enables a direction for additional data collection. Data collection is considered complete when coded categories reach a

point of saturation. Saturation means that additional data collected is no longer yielding new category development. Although it is recommended that theoretical sampling continue until the point of saturation, Corbin and Strauss (2008) stated that total saturation is probably never achieved.

Corbin and Strauss (2008) offered that emergent categories were developed in the coding process, which in Grounded Theory, has three coding methods: open coding, axial coding and selective coding. Axial coding is the process of cross connecting and relating emerging concepts together. Open coding deals with breaking apart the data and concepts while developing properties among concepts. Selective coding is the final process which involves developing a centralized theme and explaining the thematic relationships.

An important assumption about Grounded theory research is the application of objectivity and sensitivity. Objectivity exists when the researcher is not a part of the research question and does not place them within the research. Sensitivity contrasts objectivity by inviting the researcher into the field, thereby allowing for the researcher to develop a connection with the data. Sensitivity requires insight and having a foundational understanding of what is happening, and allows the researcher to clearly identify the issues, events and happenings which emerge in the data analysis (Corbin and Strauss, 2008).

The Grounded Theory approach allows the researcher to engage in the real experience of the participant, specifically a moment-in-time snapshot of the participants' realities. For the purpose of this research, this method was not optimal by itself. Since

this research seeks to understand the interactions and interdependencies of entities over time, it may be suitable to apply a supporting analytical methodology.

Hanson (2009) offered additional warnings when applying a single qualitative method. First, qualitative methods do not allow for the addition or removal of entities (people, resources, etc.) within the environment which would allow for real-world observation of how these changes impact the organization. Second, the attempt to study evolutions and change over time within an environment is costly. This would require a longitudinal approach, one that likely requires financial support and my face ethical challenges. Given these constraints, it was optimal to invite an additional method to further answer the research questions.

Dynamic Network Analysis

For the purpose of analyzing qualitative data under the theoretical lens of Complexity Leadership Theory, a method of analysis called Dynamic Network Analysis was applied in the third phase of study. Complexity Leadership Theory suggests the presence of interaction and interdependency while allowing for the emergent events over time, implying the need for an analysis method which embraces these arguments. Dynamic Network Analysis (DNA) was defined by Carley (2010) as "the study of how entities are constrained and enabled by the relations among them and the process that lead to change in these relations" (pg. 7). DNA falls into the family of network science, which assumes commonalities across networks, nodes in entity form, and the relations among

entities vary (Carley, 2010, pg. 9). Carley (2003) likened DNA to quantum mechanics by suggesting relations are probabilistic, but in DNA, the nodes can learn.

DNA is an extension of Social Network Analysis, which focuses on the study of relations in which nodes are tied to other nodes within the network. In Social Network Analysis, actors are typically people or organizations and the relations (or ties) are in social form (example: friendships, information sharing, organizational ties). Dynamic Network Analysis focuses on relations over time and unlike Social Network Analysis, allows for multiple link and node types, and allows agents to learn and interact, resulting in the altering of networks (Carley & Schrieber, 2008). In addition to Social Network Analysis, DNA also utilizes the foundations of link analysis, multi-agent modeling, machine learning, graph theory and non-parametric statistics (Carley, 2010, pg. 7).

Similar studies combining the use of DNA and Grounded Theory have emerged recently. Hanson (2009) studied the evolution and changing of ethics logic over time in a study of university faculty. Young (2009) applied the same combination of research methods to study the student athlete experience by studying how interactive dynamics influence the academic experience of a college football team.

Qualitative research was chosen to guide this research, which allowed participants to offer their personal beliefs and values relating to their leadership experiences. This research was designed in three phases:

1. The qualitative structured interview, which allowed for open ended questions which capture respondent beliefs and interpretation of their environment. The resultant is the questionnaire.

2. A questionnaire which identified participant association with other entities in the study environment. The resultant is the Meta-matrix.
3. Dynamic Network Analysis modeling and simulation, which allowed the researcher to identify key entities and simulate "what-if" scenarios given altered conditions within the environment.

The Structured Interview

Stake (2010, pg. 95) suggested the purpose of interviewing in qualitative research is to:

1. Obtain unique information or interpretations held by the participant
2. Collect aggregated data from a collection of participants
3. Discover phenomenon that a researcher cannot observe themselves

Specifically, the structured interview was applied to allow for each participant to be asked the same questions in the same order. This approach allowed for the questions to be answered by each individual separately, but in the same context. For this study, the structured interview was necessary to allow for simple aggregation of participant responses. The structured interview was designed similar to the structure of open-ended questions used in traditional surveys, but asked the participant to elaborate on their personal beliefs and opinions on a topic. A series of predetermined thematic categories were applied, which were derived from applications of Complexity Leadership Theory, organizational vision and Network Theory. Table 3.1 summarizes the predetermined categories used in this research.

Table 3.1

Predetermined Thematic Categories

Category	Explanation
Agent	Fraternity or sorority presidents and other significant agents noted by participants
Knowledge	Knowledge president possesses to lead their organization
Chapter Concerns	People, activities, events or artifacts that influence president's behavior
Greek Life Concerns	People, activities, events or artifacts that influence Greek Community behavior
Leadership Pressures	Pressures which influence behavior of presidents
Greek Community Pressures	Pressures which influence behavior of presidents
Leadership Tasks	Tasks conducted by presidents to serve Greek life
Beliefs	Beliefs presidents have about the direction Greek life
Goals - Personal	Goals presidents hope to gain from leadership experience
Goals - Organization	Goals presidents have for the fraternity or sorority
Goals - Greek Life	Goals presidents have for Greek Life
Leadership Values	Values held by individual presidents
Greek Life Values	Values perceived to be shared by the members of the Greek Community
Resources	People and other resources that enable presidents to do their job
Aspirations	Vision for the future of Greek Life
Perceived Obstacles	Potential Obstacles that could inhibit vision's progress

Following the structured interview process, the qualitative data were coded using Corbin and Strauss's (1990, 1999, 2007) recommended methodology. The responses to each question were placed into meaningful categories using Grounded Theory coding techniques. Categories were developed until concepts reached a point of saturation, allowing for the next phase of data collection. The final portion of this phase was to

merge the predetermined thematic categories with emergent thematic concepts. The resultant product was the second data collection tool – the questionnaire.

Questionnaire

Once the coded categories were finalized, the survey instrument was developed and submitted to the Institutional Review Board (IRB) for approval. Once approval was granted, the questionnaire was inputted into an online survey tool and tested by several members of the research committee. Recruitment of participation was conducted via word-of-mouth requests. The instrument was then finalized in the online survey software tool and disseminated via e-mail. The purpose of the instrument is to let participants identify the relationships between participants and other entities, such as other agents, influences, resources, knowledge, tasks and locations. All questions were closed ended and a majority will be multiple-choice multiple-answer questions.

The data analysis tool used for the model development phase requires most variables to be coded in binary format. Therefore, a majority of the survey questions posed will match this requirement (example: "check all of the following that apply"). The notable exception to multiple-choice multiple-answer questions are those of the beliefs, aspirations, and perceived obstacles scales, which instead applied a Stapel Scale (Crespi, 1961; Stapel, 1969; Hawkins et. al, 1974) ranging from +5 to -5. Traditional Stapel scales do not have a zero point which allows for a respondent to rate their opinion perfectly neutral. The purpose of the null zero point is to force a respondent to choose a side, but for this research, a neutral opinion is acceptable. The purpose of the belief scale is to

identify the influence that agents have on other agent beliefs, so for these purposes, a neutral response is suitable.

Hanson (2009) recommended applying Sproull's (2002) integrated considerations for questionnaire distribution. First, the instrument yielded suitable data which matches the research question and was scaled to match the appropriate measure. Second, questions avoided "leading questions." Third, steps were taken to ensure respondents had the necessary knowledge and willingness to ably respond.

Data Analysis for Theory Development

Organizational Risk Analyzer (ORA)

ORA (Carley, 2010) is a tool which allows for the analysis of complex networks through the interactions of entities within the network. ORA was an optimal tool for this research given its ability to manage the Meta-matrix, generate analysis at the individual and aggregate level through reports, visualizing interactions within the network and simulating "what-if" scenarios. ORA was founded, managed and is continually developed at the Center for the Computational Analysis of Social and Organizational Systems (CASOS) at the Institute of Software Research at Carnegie-Mellon University. ORA can generate more than 100 measures and metrics (Carley et. al, 2010) which are relevant to studying complex organizations, many of which are applied in this study with respect to the research inquiry.

Meta-matrix. One of the first applications of the Meta-Matrix can be traced to Carley and Krackhardt's (1999) work focusing on the interaction of people, resources and

tasks. This later influenced the usages of several key assumptions in the fields of knowledge management, operations research and social networks. (Carley, 2002). Carley (2003) later expanded a use of the Meta-Matrix to define the inter-linking of people, knowledge, resources, events, tasks and organizations (pg. 4) and labeled these different entity interactions. The Meta-matrix is composed of adjacency matrices of the organizations network, and these matrices are generated in ORA (Reminga and Carley, 2003).

The Meta-Matrix allows the researcher to define node types and relations with respect to the context of the research (Carley & Schrieber, 2008, pg. 303-304). For this study, the Meta-Matrix is composed of agents, knowledge, tasks, resources, beliefs and roles.

ORA visualizer. The ORA visualizer embraces graph theory context for Dynamic Network Analysis by producing graphical models consisting of nodes and node links. Most importantly for this research, the visualizer allows for:

1. The removal of key entities.
2. Visualizing new networks generated through network simulation.
3. Accurately visualizing network distances, edges.
4. Developing clusters by grouped like entities and distinguishing entity types by labeling and coloring of entities within cluster groupings.
5. Simulate the diffusion of ideas over time through stochastic iterations.

Graphical network visualization figures generated in ORA's Visualizer were applied throughout this study. The visualizer allowed for the identification of key

interactions as well as the ability for the researcher to validate the outputs for many of the analysis pieces.

Identifying key sets. ORA offers the option of generating cluster groupings in the Visualizer through the Group Viewer function. Grouping allows for the identification of new entities by grouping nodes with like nodes. By portioning nodes into categories, new relationships are observed. Early ideas of cohesive groups include cliques, clans and tribes (Davis, 2010), but observing live groupings is complicated and difficult to observe at a macro level. Grouping algorithms properly organize groups through applications of graph theory, enabling visual representations of interconnected nodes within the network. For this research, the Newman grouping algorithm (Newman, 2006) was applied. Newman's algorithm generates clusters by cohesive grouping, which allows natural densities (cohesiveness of the group) of groupings to emerge.

Belief propagation. To assess the role of social influence in the network, Belief Propagation analysis was used. This analysis uses Friedkin's algorithm (1998) to simulate the change in beliefs over time at the aggregate and the individual level. Friedkin (1998) introduced the structural theory of social influence in hopes of mathematically formalizing measures of how the attitudes and opinions of individuals influence the attitudes and opinions of others. Belief Propagation analysis applies a stochastic statistical change process which simulates interactions of agents in the network. The simulation accounts for changes in agent and network changes in beliefs over time. Belief Propagation analysis identifies (Carley, 2010):

1. The most common beliefs shared by most people.

2. The most strongly held shared beliefs (known as the Gini coefficient).
3. Agents most likely to change their beliefs given their interactions with other agents.
4. The most neutral individuals in the network.
5. The most opinionated individuals.

Simulations. The use of simulation "allows for what-if scenarios of strategic interventions to forecast how these interventions affect the natural evolution of the network and emergent outcomes" (Carley & Schrieber, 2008, pg. 307). Near Term Analysis was used to identify the changes in dynamic given the removal of key entities. Simulations were calculated stochastically and changes were measured over time in clear intervals. While traditional DNA metrics offer a moment-in-time snapshot of the organization, simulations allow for researchers to observe potential change over time.

Ethical Considerations

This study took place in a real setting with respondents playing active roles in the research and analysis. Each respondent was offered a document of informed consent, suggesting that they may choose to opt out of the research at any time. It is important to note the ethical consideration of confidentiality when conducting research of this type. Lofland et. al (2006) believe that "one of the central obligations that field researchers have with respect to those they study is the guarantee of anonymity via the 'assurance of confidentiality' – the promise that the real names of persons, places, and so forth will not be used in the research report or will be substituted by pseudonyms" (p. 51, from Corbin

and Strauss, 2008, pp. 30-31). When data is coded into ORA, all respondents were recoded with a standard network pseudonym (example: John Smith becomes “Agent A”).

Researcher Sensitivity

Corbin and Strauss (2007) suggested that the researcher should have a level of connection with the research inquiry. This research is conducted by a former fraternity president with past and present ties to Greek Life on college campuses, notably the institutional research setting. Additionally, the researcher understands the challenges of holding a leadership position in a university Greek organization. Although the influences, pressures, concerns, beliefs and other entities considered may have changed in scope, the concepts are similar, and have been since the inception of social fraternities.

CHAPTER FOUR

FINDINGS

The purpose of this study is to model the role of vision in a complex organization and the roles that agents, tasks, knowledge, roles, resources and beliefs play. For this purpose, an investigation into the current structure of this model is conducted. Additionally, this study seeks to develop a better understanding of how agent's individual vision and beliefs about the organizational vision can be influenced over time. This purpose seeks to identify the evolution of vision, therefore, requires a method that simulates how these entities change over time.

As detailed in previous chapters, this research was guided by the question: How does organizational vision interact with networked interdependency among organizational agents (people, resources, knowledge and roles) to influence leader-related beliefs and task performance? To support this question, the following questions are posed:

1. What distinct groupings related to the organizations' vision exist within the dynamic network?
2. How does social and relational influence and knowledge interaction impact the beliefs of agents within an organization?
3. How would the organizations' vision change conditioned on the removal of internal and external pressures, organizational concerns and perceived obstacles?

4. Which pattern of vision (uniform or fragmented) is most effective for organizational learning and task performance?

To answer these questions, 8 one-on-one interviews were conducted in an effort to develop a questionnaire. Following the interview phase, responses were coded into meaningful categories that served as the inputs for questionnaire development. The questionnaire was then disseminated to the representative sample to identify the interactions of agents and other entities in the network. Table 4.1 shows the number of nodes per pre-determined thematic category.

Table 4.1

Meta-Network Node Counts

Node class	**Size**
Agents	27
Beliefs	26
Chapter Concerns	14
Chapter Goals	23
Greek Community Pressures	11
Greek Community Values	9
Greek Life Concerns	18
Greek Life Goals	11
Greek Life Vision	12
Greek Life Vision Obstacles	16
Knowledge	16
Leadership Pressure	13
Leadership Values	15
Personal Goals	17
Resource	25
Task	23

In total, 27 fraternity and sorority leaders completed the questionnaire. This is a response rate of approximately 85% of the total Greek leadership population. Following field collection, the data was imported into the Organizational Risk Analyzer (ORA) 2.2.8.

Each analysis in ORA is used for the distinct purpose of answering each respective research question. Table 4.2 shows the summary measure generated within ORA that describes the overall network performance.

Table 4.2

Measures of the Greek Community Meta-Network

Measure	**Value**
Network Complexity	0.467
Social Network Density	0.3889
Relational Network Density	0.3442
Performance as Accuracy	0.668
Knowledge Congruence	0.351
Average Communication Speed - Social Network	0.535
Average Communication Speed - Relational Network	0.513

The Greek leadership community is bound by high levels of interaction and high levels of unique knowledge. Given the levels of interaction and potential to communicate a moderately speed, it is important to identify the top agents within the Meta-Network. Using ORA's Key Entity reporting tool, network measures were generated that identify central actors within the network.

Figure 4.1

Recurring Top Ranked Agents

Table 4.3 shows network summaries of top recurring agents with relevant network measures. Emergent leaders are those who have a position within the network that is most likely to interact with agents and other entities, yet who may or may not become formal leaders (Carley, 2010). Agents in the know are those who are linked to many other agents, thus are very likely to have access to the knowledge, beliefs and resources of others within the network (Carley, 2010). Potentially influential agents, also known as "gatekeepers" (Carley, 2010), are those with the shortest paths among agent groups. Those in this position in the network are those most likely to communicate messages between groups. They are influential since they have the ability to decide what messages to communicate and to what level each group will receive (Carley, 1999).

Table 4.3

Influential Agents

Rank	Agent	Value	Description
1	Agent J	0.411	Emergent Leader - Social Network
2	Agent L	0.409	
3	Agent K	0.391	
4	Agent G	0.388	
5	Agent T	0.386	
1	Agent J	0.411	Emergent Leader - Relational Network
2	Agent L	0.409	
3	Agent K	0.391	
4	Agent G	0.388	
5	Agent T	0.386	
1	Agent K	0.654	Agent in the know - Social Network
2	Agent T	0.654	
3	Agent L	0.635	
4	Agent J	0.615	
5	Agent I	0.596	
1	Agent B	0.635	Agent in the know - Relational Network
2	Agent L	0.635	
3	Agent X	0.519	
4	Agent K	0.5	
5	Agent C	0.481	
1	Agent T	0.188	Potentially Influential - Social Network
2	Agent L	0.118	
3	Agent Z	0.116	
4	Agent J	0.086	
5	Agent O	0.053	
1	Agent C	0.18	Potentially Influential - Relational Network
2	Agent B	0.153	
3	Agent L	0.138	
4	Agent Y	0.117	
5	Agent U	0.061	

Agents described in Table 4.3 are agents that are highly likely to diffuse knowledge and influence beliefs. Since this group is comprised of formal leaders of each respective organization, these measures represent a form of informal leadership within the Greek leadership community.

Organizational Groupings

To answer the first question related to distinct groupings, a series of cluster analyses are performed using Newman's grouping algorithm (2006). ORA enables a user to drill down group associations in the Visualizer, and then assigns each grouping within the node a Newman group membership number. An optimal number of clusters is met when each group is most homogenously aligned within the cluster group while heterogeneous from other groups. For this study, cluster groupings were drilled down until single nodes began to break off from a single group, this being a fragmented node. Table 4.4 shows the breakout of cluster groupings by respective network node.

Goals Networks

The agent by goals networks correspond to the interaction of agents with personal goals, goals for their Greek organization, and goals for Greek Life. First, the personal goals groupings are displayed in Table 4.4. Agent's groupings for organizational goals are observed in Table 4.5, and goals for Greek Life are grouped in Table 4.6.

Personal goals. Each respondent was asked to identify up to 7 personal goals to which they associated. Table 4.5 shows the results of the clustering of personal goals.

Group 1 is most associated with personal growth through social experiences. Not only do they seek to develop skills to network socially, but they wish to put those to the test by learning how to recruit new members and do so without attempting to please them. Cluster Group 2 is largely associated with growth through new experiences and learning from those with unique ideas, and through those relationships to develop a unique style of leadership. Cluster Group 3 is most associated with challenging deep rooted values and developing the courage to stand behind values. Cluster Group 4 seeks to grow through experiencing and appreciating Greek Life and to use that growth to better serve their chapter and influence chapter members.

Table 4.4

Personal Goals Groupings

Chapter Goals	**Group**	**Thematic Category**
Gain leadership experience for career development	1	Develop socially
Develop social networking skills	1	
Learn to avoid people pleasing	1	
Learn how to recruit new members	1	
Network within the university administration	2	Develop through experience
Develop diverse relationships	2	
Develop my own leadership style	2	
Test my will as an individual	2	
Enhance personal values	3	Develop integrity and the courage to apply it in leadership
Develop self-confidence	3	
Stand up for students or organizations that are treated unfairly	3	
Develop courage to stand up for the right decisions	3	
Grow to appreciate Greek Life at a higher level	4	Develop skills to help the chapter grow
Grow to appreciate my chapter at a higher level	4	
Let go of poor leadership habits	4	
Challenge faith/spirituality	4	
Use presidential position to positively influence chapter member values	4	

Goals for organization. Since members of the Greek Leadership organization is responsible for leading respective chapters, it is important to identify what they wish to accomplish and identify the alignment of these chapter goals. Each participant was asked to choose up to 7 goals they actively desire for their chapter. The chapter goals summary table is displayed in Table 4.5.

Table 4.5

Chapter Goals Groupings

Chapter Goals	**Group**	**Thematic Category**
Keep charter	1	Eliminate and mediate chapter issues and rebuild chapter
Successful recruitment	1	
Neutralize negative attitudes	1	
Fix mistakes from past leadership	1	
Win national awards	2	Public relations campaign - Build a reputation as a successful chapter in key categories of leadership and philanthropy
Win Philanthropy of the year	2	
Develop brand recognition	2	
Respect university admin	2	
Fix alumni relations	2	
Encourage members to lead on-campus orgs	2	
Become an official on-campus chapter	2	
No new member drop outs	3	Develop informal reputation within Greek Community and student body
Member in IFC/Panhel Exec	3	
Respect from other Greek orgs	3	
Brand for new students to know	3	
Respect student body	3	
Develop new recruitment strategies	3	
Build meaningful events for university	4	Develop accountability, mutual respect and pride within the chapter
Enhance member accountability	4	
Set higher internal chapter standards	4	
Improve leadership transition	4	
Make competition not boastful	4	
All chapter members pay their dues	4	

Cluster Group 1 serves to eliminate and mediate current issues within the chapter. Not only are these members concerned with fixing their chapter, the desire to revitalize their chapter by collecting a successful crop of new members. These problems may not even be outwardly obvious to members outside of the organization. The presidents

themselves may have identified opportunities to grow. Cluster Group 2 desires developing a reputation with both the university and their national headquarters. By doing so, they have set goals to achieve awards for the chapter and implant members of their chapter as leaders of other on-campus organizations. In a sense, these organizations are running a public relations campaign. As a result, they desire gaining the respect of the university administration.

Cluster Group 3 desires to develop strong reputations with students and other members of Greek Life. While Cluster Group 2 wants to promote a more formal reputation by winning awards, Cluster Group 3 wants to build a reputation with other Greek members and the student body by building a brand for students to recognize and by placing members in leadership positions within the governing Greek body. Cluster Group 4 desires to promote growth and development of the chapter internally at the membership level. They set their targets at improving the standards, enhancing member accountability, ensuring everyone meets their financial responsibilities and building a culture that is rooted at internal pride rather than defeat of others.

Greek Life goals. The groupings of Greek Life goals are somewhat of an anomaly. While there are only 11 goals in total for Greek Life, these emerged into 4 cluster groupings. The Greek Life goals clusters are displayed in Table 4.6.

The first cluster grouping is centered on unifying the Greek Community and ensuring a bright future for future members. They wish to do so by building a Greek Village, improving academic standings of chapters, promoting respect between chapters, and ensuring that no incidents happen that could threaten the future of Greek Life.

Cluster Group 2 is somewhat random in nature, as this group desires to review the requirements for new chapters to be recognized by the university and to develop a major event for the university. This could be thematically summarized by those who wish to maintain Greek Community size and build something with the current assets in place.

Table 4.6

Greek Life Goals Groupings

Greek Life Goals	**Group**	**Thematic Category**
Build the Greek Village	1	Unify Greek Community and ensure a positive future
Take steps possible to ensure no more tragedies/incidents	1	
Improve Greek Community academic standing	1	
Respect among chapters	1	
Review new chapter entry policies	2	Maintain size and utilize assets
Build a major event for university	2	
Equity in Greek awards	3	Equity and fairness
GC to be campus leaders	4	Promote the real contributions of the GC
Fix the chapter of excellence program	4	
Utilize existing Greek boards for their capabilities	5	Assets are in place should be used to solve problems
Hold individuals (rather than organizations) responsible for incidents	5	

Group 3 is solely focused on developing equity and fairness among chapters by rebuilding the Greek awards system. Cluster Group 4 desires to encourage Greek Community members to serve other organizations in leadership capacities. Additionally, they wish to fix the program that grades a chapter's performance. This theme is likely summed up by those who want to promote Greek member contribution. Cluster Group 5 desires to utilize current resources at their disposal while fixing the accountability of students. These individuals feel that individuals should be held responsible. It is likely that this group feels that a Greek board exists already that holds individuals in the Greek Community who are responsible for incidents accountable, but the weight of such incidents is still affecting whole organizations. Simply, they likely feel that boards exist to solve issues that are affecting entire chapters, thus the system is inefficient. These assets could be used to solve problems that could alleviate the burden on entire chapters.

Concerns Networks

The concerns networks serve to identify what current or projected issues could have a negative impact on Greek Life. Participants were asked to identify concerns related to their chapter and to Greek Life. The cluster groupings assist in identifying the themes among the concern nodes.

Concerns for chapter. Cluster groupings of perceived chapter concerns are shown in Table 4.7. Four themes emerge from this analysis. Cluster Group 1 shows trends that suggest a worry for future growth. The chapter is perceived to be apathetic, likely connected to younger members do not understand the roots and foundation of the

organization. As a result, they feel as if the identity of their chapter is beginning to diminish. This group recognizes that these changes require a strong leader to guide the chapter in the right direction. Cluster 2 feels the chapter is beginning to create bad habits and the preferences of members are shifting to selfish ones. They worry that past negative behaviors will be more difficult to deal with in the future due to the increased demands of students today. Cluster group 3 feels that it is difficult to manage risks. They understand that the culture of risk management is changed, that conditions of the past no longer exist, and that risks are becoming increasingly difficult to enforce. Cluster group 4 fears that growth may be increasingly difficult to achieve due to the declining popularity of Greek life among incoming students. It is likely they feel that recruiting and keeping new members is especially difficult, and that new policies on alcohol may inhibit the motivation of new students.

Table 4.7

Chapter Concerns Groupings

Chapter Concerns	Group	Thematic Category
Young members do not understand chapter ritual	1	Chapter losing identity and focus
Apathy among chapter members	1	
Social changes require strong future leaders	1	
Losing strong chapter identity held in the past	1	
Social aspect is becoming dominant	2	Changing social conditions and poor past habits make for difficult change
New conditions call for new ideas	2	
Students today have harsher pressures and conditions	2	
Sense of entitlement from new members	2	
Difficulty of breaking away from past behaviors	2	
Risk management difficult to enforce	3	Adapting to risk averse culture is difficult
Alumni members don't respect current policy	3	
Alcohol free housing policies	4	Greek Life losing popularity with new students
Incoming students don't embrace Greek Life	4	
Losing new members/pledges	4	

Greek Life concerns. The Greek Life concerns network is an agent by concerns network, in which each agent is associated with concerns for Greek Life. Each respondent was asked to choose up to 7 concerns for Greek Life. Four cluster groups emerged with respect to Greek Life concerns. Summaries for these groupings can be found on Table 4.8.

The theme of Cluster Group 1 is caution and vigilance. These agents are critical of policies to let new chapters enter, feel that chapter recruitment enables at-risk members, and are concerned with alcohol abuse and inappropriate behavior at social functions. All of these factors have the potential to be devastating to the future of Greek Life, and the emphasis on these topics is evident within the inner circle of the group. Cluster Group 2 fears that the Greek Community is losing its bargaining power with administration. They fear that the Greek Village is an opportunity for the administration to control them, thus they question the motivations of administration. Interestingly, these concerns are include risk management and threats of incidents.

Table 4.8

Greek Life Concerns Groupings

Greek Life Concerns	**Group**	**Thematic Category**
Policies for new chapter not critical enough	1	Cautious and vigilant
Chapter recruitment is not strict enough/Risky members enter too easily	1	
Alcohol abuse/binge drinking	1	
Behavior at social functions	1	
Dissention between Sororities and Fraternities	1	
The administration using the Greek Village to micro-manage Greek Life	2	Actions of Greeks could remove bargaining power with administration
Academic rigor could deter prospective members from joining	2	
Risk Management/Threats of an incident	2	
The motivations of the administration	2	
The Greek Community has no leverage for bargaining with the administration	2	
Outside perceptions of parents	3	Outside perceptions could damage the image of Greek Life
Outside perceptions of university	3	
Media criticism/shedding negative light	3	
Laziness/Lack of motivation by Greek students	3	
The economy	4	Lack of unity in tackling issues as a Greek Community
Hazing	4	
Dissention between motivated Greeks and non-motivated Greeks	4	
Dissention between competing chapters	4	

Cluster Group 3 is primarily concerned with outside perceptions, notably the media, the university and parents. The negative perceptions of these three entities could have a sizeable effect on the future of Greek Life. Cluster Group 4 shows themes of disagreement between rivaling chapters. It is likely that hazing is more connected to some chapters than others, and more likely connected to some Greek Community members than others. Those who are motivated to eliminate problematic issues may face disagreement from Greeks who are not motivated to change. Additionally, the state of the economy could be linked to this group due to how it may affect some chapters more so than others. Chapters who have financial burdens may have different motivations for Greek Life policies than those who do not. It is possible that priorities of chapters may differ significantly, and that unity may become increasingly difficult when constraints differ from chapter to chapter.

Values Networks

When measuring vision, one of the most important connections to evaluate is shared or fragmented values. Leadership values as well as perceived Greek Life values were captured in the questionnaire. Participants were asked to identify the most important values they align with personally as well as those they feel most align with Greek Life. The cluster groupings assist in identifying themes behind the values.

Leadership values. Each respondent was asked to choose up to 5 values that most aligned with their leadership style from a battery of options. Cluster themes and attributes of leadership values can be found in Table 4.9. Four cluster groupings emerged.

Cluster Grouping 1 aligns with respect, loyalty and equality, and respondents set their sights to lead by this example. They are rooted in action and hope their actions motivate the values and actions of others. They seek to use their role as president to lead by this example and hope to foster actions accordingly. Members of Cluster Group 2 are grounded in their faith, and are dedicated to a forward thinking approach. In a sense, they are visionary and inspirational leaders.

Cluster Group 3 is cautious and aware of the potential damaging effects of past negative behaviors. They likely lead through root-cause analysis, and consider possible hazardous effects that could result from a decision. These members are also likely to favor generating ideas. Cluster Group 4 is highly motivated and utilizes an honest and upfront approach to leadership. It is likely that want to inspire others with their hard work while approaching their chapter with transparency.

Table 4.9

Leadership Values Groupings

Leadership Values	Group	Thematic Category
Respect among other chapters	1	Lead through action and hope to inspire through their actions and motivations
Strive to lead by example	1	
Loyalty for my chapter	1	
Equality	1	
Use title of president to promote action	1	
Dedication to chapter	2	Lead through vision and inspiration
Forward thinking	2	
Faith/spirituality	2	
Cautious/Vigilant	3	Lead through root-cause assessment
Break norms of past negative behavior	3	
Honest with chapter	4	Lead through hard work and an honest, up-front approach with members
Work ethic	4	
Persistence	4	
Integrity	4	
Willingness to change and adapt	4	

Greek Community values. Each president was asked to identify the values that they felt most aligned with members of the Greek Community. Table 4.10 shows the results of the Newman groupings. While only 9 cultural values emerged from the initial interviews, these grouped into 3 clusters. Cluster Group 1 feels that Greeks are united in purpose, primarily through philanthropy and social events. These two things are likely

what is perceived to most unite Greeks. Since the Greek Community in this study is composed of all social fraternities and sororities, it is no surprise that unity is most identified with two things that most bring together social interaction.

Cluster Group 2 views Greek Community values in terms of academic standards and competition. Since much Greek competition is oriented around chapter grades, this pattern is not surprising. Additionally, since grades are as close to the one metric that is standard for all students, it makes sense as to why it is most common for Greeks to compete using this metric. The third cluster grouping views Greeks are rooted in diversity and in unique chapter brands. All fraternities and sororities have unique letters, ritual, documents and artifacts, and have something different to offer potential members. This structure naturally favors the idea of diverse thinking among members.

Table 4.10

Greek Community Values Groupings

Greek Community Values	Group	Thematic Category
Unity as Greeks	1	United through social interaction
Philanthropy/Service	1	
Community/Shared Purpose	1	
Social events	1	
Scholarship/Academics	2	Competition over benchmarking metric
Chapter competition	2	
Diversity/Open-mindedness	3	Diverse thinking and unique heterogeneous identity
Fraternity/Sorority brand	3	
Social connection with other Greeks	3	

Pressures Networks

While leaders are driven by values, it is important to understand the sources of pressure faced when guided by those values. Pressures applied to leaders and members of the Greek Community offer a unique challenge to promoting effective change. Each participant was asked to identify which entities place the most pressure on them as leaders. Additionally, they were asked to identify what they perceived to be the strongest source of pressure for Greek Community members.

Leadership pressures. Newman's grouping algorithm identified 4 cluster groupings of leadership pressure within the Meta-Network. Cluster Group 1 primarily addresses entities with legitimate influence over the presidents. These include National

Headquarters, Chapter Advisors, and the Chapter Executive Council. Tied to these entities is the pressure of monitoring possible hazing activity and the competition with other chapters. It is likely that legitimate bodies place pressure around the topics of hazing, and a common metric for measuring an organizations performance is to compare them to others within the institution. Balancing the pressures of National Headquarters and Chapter Advisors with the bodies of the Chapter Executive Council likely require a great deal of discernment. It is also likely that the same pressures are placed on other members of the Chapter Executive Council by these legitimate bodies.

Table 4.11

Leadership Pressures Groupings

Leadership Pressures	**Group**	**Thematic Category**
National headquarters	1	Legitimacy
Chapter Advisors	1	
Competition between other chapters	1	
Monitoring possible hazing activity	1	
Chapter Executive Council	1	
Risk Management	2	Bodies that can damage chapter status
Rumor-mill communication	2	
University administration	2	
Chapter members with outward negative attitudes	3	Current and former chapter members, balancing demands
Balancing what chapter wants from university demands	3	
Discerning from what chapter wants from what advisors want	3	
Alumni	3	
Friends who are not Greek	4	Non-Greeks

Cluster Group 2 is grounded in actions that can cause significant damage to a chapter. The university administration is perhaps the chief disciplinarian when it comes to enforcing policy within the Greek Community. Reported incidents and rumor-mill communication are the two most likely sources which call the attention of the administration. The administration is most likely to act when they receive reports of an incident or investigate if they hear from sources of incidental activity by a chapter.

Cluster Group 3 is connected by current and former members of the chapter. This cluster is rooted in discerning the desires of former and current members while enforcing policy that is consistent with the demands of university administration. The demands from the administration and from current and former members of the chapter are likely to be different at times. Improper discernment can lead to the negative attitudes of chapter members and a damaged rapport within the chapter.

Cluster Group 4 is defined by the theme: friends who are not Greek. Being a fraternity or sorority president is typically a very demanding role and is esoteric in nature. There is a lot of interaction among presidents who are primarily connected by their roles, likely because they are the ones who most understand the demands of the role. Assymetric information by those who are not Greek is evident. Not only is there disconnect between understanding the demands of leading an organization, but the activities of Greek organizations are different than most. Friends outside of the Greek Community likely challenge the actions and attitudes of fellow friends who lead Greek organizations.

Greek Life pressures. Being a member of a fraternity or sorority is a privilege, but it also comes with a responsibility. Members of the Greek Community are faced with different sources of pressure every day. Each participant was asked to connect values to their perception of the Greek Community. Four cluster groupings emerge, and the results are found on Table 4.12.

Table 4.12

Greek Community Pressures Groupings

Greek Community Pressures	**Group**	**Thematic Category**
Peer Pressure/A need to fit in	1	Discernment
Enforced university policy	1	
Compromising what is wanted for what is needed	2	Conveying a positive image
The Media	2	
The need to always convey a positive image	2	
Parents	3	Institutions that establish norms to follow
Police	3	
University high standards for Greeks greater than other universities	3	
Academic stresses	4	Inputs for maintaining Greek status
Chapter dues	4	

The cluster groupings are somewhat random in nature. Cluster Group 1 is connected by peer pressure and university policy. This is likely due to the need to discern between the pressures from peers with the need to follow the rules the administration puts in place. Cluster Group 2 reflects the pressing need to convey a positive outward image. As a result, leaders are tasked with discerning between consistently conveying a positive image and acting on wants. It is no surprise that the media is tied to this category since the media has the potential to make a significant impact on image in both a positive or negative direction.

Cluster Group 3, albeit somewhat random, is divided into seveal external agentic pressures. Police, parents, and the standards of the institution all have principles and norms that members are expected to follow. As a result, members of the Greek Community must be able to follow the norms established by these entities. Cluster Group 4 is united by sources that require effort outside of the contribution to Greek Life. Members of the Greek Community have responsibilities to maintain academic standards as well as fulfilling financial obligations to the chapter. In other words, these are the two most important inputs for the right to maintain the status of being a chapter member.

Knowledge Network

The Knowledge Network consists of items regarding comprehension necessary to effectively lead a Greek Organization. Participants in the structured interview phase identified a series of knowledge sets that are necessary to be a successful president. Participants of the questionnaire were then asked to rate their understanding on a 4-item categorical scale, ranging from "Not at all Knowledgeable" to "Extremely Knowledgeable."

As discussed earlier in the analysis of agentic influence, it was determined that agent knowledge congruence was relatively low, suggesting that agents had the level of knowledge to complete their required tasks approximately 35% of the time. This is likely due to the differing structure of each fraternity or sorority. While the role of presidents in certain organizations may require the actions of certain tasks, in other organizations, those tasks may be delegated to other members of the chapter. As a result, the president's

role is to enable their members to do their job. Unfortunately, if chapters have members who are responsible for certain volatile tasks, the risk of lacking a certain level of knowledge can be high.

Table 4.13 outlines the most dominant sets of knowledge in the Meta-Network. Dominant Knowledge is calculated similar to the "Agent in the Know" metric in the influential agents section. Dominant Knowledge is a measure of the overall linkage of certain knowledge bits within the Meta-Network.

Table 4.13

Dominant Knowledge Owned by Agents

Rank	Knowledge	Value	Unscaled
1	Chapter History	0.893	109
2	Fraternity/Sorority Ritual	0.893	109
3	New member Education practices	0.861	105
4	National Headquarters Risk Management Policies	0.803	98
5	University risk management policies	0.787	96
6	Recruitment Policies	0.787	96
7	Social Calendar Planning	0.762	93
8	Chapter of Excellence criteria	0.762	93
9	Philanthropy Planning	0.705	86
10	Statistics about Greek Life	0.697	85

Interestingly, but not surprisingly, the top four most common knowledge sets are related to each leader's respective chapter. Unfortunately, when it comes to collective action among Greek leadership, this is not the most relevant knowledge to have. It is interesting to note what knowledge sets fraternity and sorority presidents collect. Since knowledge sets related to their chapter are most connected to the most demanding tasks they are required to complete as a leader, it is not surprising that their emphasis is placed on these knowledge sets. This also likely speaks to the type of training they receive throughout their development as a fraternity or sorority member.

Knowledge groupings. Like the other groupings sections, Newman's algorithm was utilized to cluster members with themes of knowledge sets. Five knowledge sets emerged from this analysis, and can be viewed in Table 4.14. Cluster Group 1 places emphasis on recruiting and developing new members. Recruitment policies and new member education practices are the most demanding needs of chapters. Risk Management Policies from National Headquarters fits in this cluster, likely due to anti-hazing campaigns from national chapters. It is also likely that a number of chapter presidents transitioned into the top leadership role after serving as the rush committee chairman or the new member educator.

Cluster Group 2 deals with large scale planning initiatives, notably of social and philanthropy events. Thinking back to the assessment of values networks, it is evident that Greeks are united, and likely interact, through social and philanthropic efforts. Additionally, all of these require a significant amount of paperwork and outsourcing.

Holding social and philanthropic events are complex tasks that require a lot of inputs, thus it is not surprising that these knowledge sets group together.

Table 4.14

Leadership Knowledge Groupings

Leadership Knowledge	**Group**	**Thematic Category**
Recruitment Policies	1	Recruiting and training new members
National Headquarters Risk Management Policies	1	
New member education practices	1	
Social Calendar Planning	2	Planning initiatives of complex entities
Philanthropy Planning	2	
Chapter of Excellence criteria	2	
University Academic Policies	3	University policies and requirements
University Judicial Policies and Procedures	3	
University administration politics	3	
University Student Handbook	3	
University risk management policies	4	Achieving success in planning from understanding prior experiences
Budget/financial planning	4	
Chapter History	4	
University History	4	
Statistics about Greek Life	5	Repetitive learning
Fraternity/Sorority Ritual	5	

The third knowledge set in Cluster Group 3 centers on university policies and procedures, notably academic and judicial. It is not surprising that an understanding of university politics plays a role in this cluster. This group places a heavy emphasis on knowing and understanding the formal and informal rules the university places on their organizations. What is surprising is that university risk management policies do not fit into Cluster Group 3, rather, it ties into Cluster Group 4.

Cluster Group 4 shows themes of understanding the roots of the chapter. This group is somewhat of an anomaly, but it appears that understanding how to lead a chapter requires emphasis on the history of the chapter. Since chapter history has some reasonable alignment with university history, it is not surprising that it fits into the same cluster. Risk management policies and financial planning appear to be somewhat disconnected from what is understood from a historical perspective. While these do not appear to be a natural fit, this paradox may have a reasonable explanation. It is highly possible that garnering success in financial and risk management planning has to be pre-established years prior to the leader's arrival. Since these two knowledge sets require unique understanding, it is possible that these practices have become a modeled leadership tradition within the organization. Organizations that have pre-established methods of planning finances and risk assessment likely have a deep understanding of the experiences of prior leaders.

Cluster Group 5 groups the chapter ritual with statistics about Greek Life. This group is also somewhat of an anomaly, but it is not unreasonable to think that two seemingly unrelated knowledge sets group together given their heterogeneity from other

knowledge. Since these two knowledge sets do not have much overlap with other knowledge sets, it appears that these sets are naturally acquired through hearing them repetitively. Since chapters likely practice ritual often, after some time, the ritual is quickly acquired. It is also likely that presidents are required to know the ritual better than most, it seems logical that it becomes natural understanding. This is observed in the analysis of Dominant Knowledge. Greek Life statistics likely follow the same pattern. It is likely that presidents hear the common statistics very often from university administration and leaders from national headquarters.

Task Network

While it is important to assess what knowledge is present in the Meta-Network, it is equally important to understand the tasks performed by chapter presidents. The agent by task network consists of agents and their connection to the tasks that significantly impact their leadership. Each participant was asked to select up to 10 tasks among a battery of 27 tasks. Table 4.14 details tasks with the highest concentration among Greek presidents.

It is not surprising that a majority of task demands are centered on communication, the most demanding of which is e-mail correspondence. Interestingly, only one of the top ten tasks is focused on the interaction of Greek leadership, yet Greek leader interaction is relatively high.

Task groupings. Table 4.15 details the characteristics of task groupings. A total of 5 task groupings emerged through Newman's algorithm. Cluster Group 1 is role

related, and groups tasks that are common to the role of a president. The president is likely the one responsible for maintaining a membership roster and for presenting the state of the chapter to headquarters, while they are also heavily grounded by e-mail communication.

Cluster Group 2 plays a diversified role within their chapter, as they communicate with their alumni, coordinate chapter meetings while also managing the chapter budget and contributing to big brother/big sister events. Cluster Group 3 appears to primarily serve as an ambassador to nationals while also contributing to the social committee decision making. In a sense, they are a liaison to home base as well as the activities that Greek Life is centered on.

Table 4.15

Leadership Tasks Groupings

Leadership Tasks	Group	Thematic Category
Responding to emails	1	Administrative
Maintaining membership roster	1	
Playing the key figure to meet prospective new members	1	
Presenting the state of the chapter to national headquarters and alumni	1	
Acting as a "sounding board" for new ideas	1	
Communicating with alumni	2	Participant
Coordinating chapter meetings	2	
Big brother/sister activities	2	
Managing the chapter budget	2	
Communicating/reporting to nationals	3	Ambassador/ Liaison
Social committee decision making	3	
Serving as ambassador for conferences	3	
Communicating with chapter advisor	4	Acquire and disseminate information
Philanthropy documentation	4	
Risk management documentation	4	
Internal problem solving	4	
Preparing and running chapter meetings	4	
Sitting in chapter judicial meetings/committees	4	

Table 4.15

Leadership Tasks Groupings (Continued)

Leadership Tasks	Group	Thematic Category
Attending Greek community roundtable meetings	5	Interaction with authority
Hosting chapter consultant from national headquarters	5	
Presenting to the Board of Trustees	5	
Attending all "Big 7" Organizations' meetings	5	
Holding office hours for Director of Fraternity/Sorority Life	5	

Cluster Group 4 also plays a diversified role and appears to have a hand in a lot of chapter activities. Leaders are primarily responsible for attending meetings relevant to the chapter as well as completing paperwork and documentation. Given their diversified role, they are also best suited for an informal role in internal problem solving. Since they are responsible for many diversified tasks, they are likely to have access to large amounts of information.

Cluster Group 5 is somewhat similar to the liaison role of Cluster Group 3, but on a much larger scale. Since their role make them highly connected with university officials, this role may be more demanding. Additionally, since they are the most likely to attend roundtable meetings and “Big 7” organizations and host the chapter consultant, they likely have access to the most unique and limited, yet valuable sources of information.

Resources Network

Complex leaders often have access to a variety of resources that enable them to appropriately perform their tasks. The agent by resource network consists of agent's tie to relevant resources within the Meta-Network. Each participant was asked to select up to 7 resources they use as a Greek leader. Table 4.16 details the Dominant Resources utilized by Greek presidents. Similar to the measure of Dominant Knowledge, Dominant Resources are those with the highest degree of access within the Meta-Network.

Table 4.16

Dominant Resources

Rank	Resource	Value	Unscaled
1	Chapter executive council	0.852	23
2	Other presidents in the Greek Community	0.815	22
3	Chapter Advisor	0.778	21
4	Past leaders of the chapter	0.667	18
5	Director of Fraternity and Sorority Life	0.519	14
6	Blackberry/Smartphone	0.407	11
7	Chapter membership	0.333	9
8	Chapter of Excellence requirements	0.333	9
9	PanHel President	0.296	8
10	Risk Management guide	0.185	5

The most commonly used resource within the Meta-Network is the Chapter Executive Council. It appears that a majority of Greek leaders utilize the leadership within their chapter to effectively do their job. Unlike the overflow of redundant knowledge in the Meta-Network (overflow of chapter specific knowledge that would serve little to the Greek Community), having other internal chapter members as significant resources likely influences a great deal of positive action within the Greek Community. The second most dominant resource is other Greek presidents. This is evident from the Relational Network, but it is now highly evident that, via their own admission, there is a great deal of interaction between Greek presidents with respect to Greek affairs.

Resource groupings. Table 4.17 details the results of the Newman Groupings for resources. Five Cluster groupings emerged as a result of the analysis. Cluster Group 1 is most inclined to utilize other presidents within the Greek Community, as well as past leaders of their own chapter, and the Director of Greek Life. This group seeks to utilize the experiences and understandings of others, notably those with prior experience in the same role. It is likely that this cluster seeks to learn from other people's successes and failures.

Cluster Group 2 is more inclined to use formal documents as a resource, and it is likely that their chapter advisor influences them to do so also. They are the most inclined to utilize documents as well as senior advisors. Cluster Group 3 seeks the council of their internal member leadership. Additionally, this group utilizes resources that best follow

the “letter of the law.” In other words, they utilize resources that help them follow formal and informal rules as close as possible.

Cluster Group 4 is more open in their acceptance of resources, thus is more likely to seek the help of their entire chapter. Additionally, it is likely that they guide their leadership from the formal resources of both national headquarters and the university chapter performance manual. Cluster Group 5 is a series of fragmented nodes. While these nodes are not directly connected to agents, t presidents do utilizes these resources, but that they do not consider them among their top resources. It is worth noting that no one considers a Chapter Officer Manual as a key resource. This implies two possible observations. First, Greek Life culture or structure may shift often enough that maintaining a manual is a wasted resource. Second, it is likely that chapters allow for unique leadership style for each president.

Table 4.17

Resource Groupings

Leadership Resources	**Group**	**Thematic Category**
Past leaders of the chapter	1	Utilize the experiences and understandings of others
Other presidents in the Greek Community	1	
Ritual	1	
Director of Fraternity and Sorority Life	1	
IFC President	1	
Chapter Advisor	2	Documents, communication medium, and senior advisors
A past president of another chapter	2	
Blackberry/Smartphone	2	
Financial Budget	2	
IFC/Panhel Book of Rules	2	
IFC/Panhel Judicial	2	
Chapter executive council	3	Seeks internal council, guided by rule books
Chapter Vice President	3	
3rd party social vendors	3	
Risk Management guide	3	
Recruitment Handbook	3	
Chapter membership	4	Open to all personnel resources, likely leads by formal resources
Officer manual from headquarters	4	
PanHel President	4	
Chapter of Excellence requirements	4	

Table 4.17

Resource Groupings (Continued)

Leadership Resources	Group	Thematic Category
Officer manual from university	5	Fragmented nodes
Officer manual developed by the chapter	5	
Published leadership books	5	
IFC/Panhel Creed	5	

Organizational Beliefs

Complex leaders often have access to a variety of resources that enable them to appropriately perform their tasks. The agent by resource network consists of agent's tie to beliefs about the organization. Each participant was asked to rate their level of agreement on a scale of -5 (absolutely disagree) to +5 (absolutely agree) with respect to all possible beliefs about the organization.

The second section of Chapter Four visits organizational beliefs at a more significant degree. With respect to belief clusterings, a unique anomaly occurs. Table 4.18 identifies the groupings for the 26 organizational beliefs. Interestingly, beliefs do not cluster neatly; rather, it appears that each belief could belong to a different cluster group. This anomaly is further explored in section on belief propagation.

Table 4.18

Organizational Beliefs Groupings

Organizational Beliefs	**Grouping**
The administration does not work/collaborate with IFC/Panhel, they just dictate and enforce policy	3.0;1.0
As a president, there is no luxury of deciding which tasks they want to complete	2.0;1.0
Chapter presidents are at the top of the liability chain	1.0;3.0;2.0
Police profile Greeks students	2.0;1.0
University is reactionary rather than proactive with respect to incidents	3.0;1.0;4.0
Fraternities and Sororities are complimentary/contribute benefits to each other	1.0;3.0;4.0
Fraternities/sororities that commit a university offense should be solely responsible, not the entire Greek community	1.0;3.0
Greek awards favor certain chapters over others	1.0;3.0;4.0
Greek Leaders are forced into positions by the administration that damage rapport with chapter	2.0;4.0
Greek Life is the first impression of university for incoming students	2.0;1.0
Greek presidents are over-encumbered with day-to-day tasks	3.0;1.0
Greeks are held to a higher standard with respect to student incidents as opposed to non-Greeks	1.0;3.0
IFC and Panhel should be treated separately with respect to incidents	1.0;3.0;4.0
Letting new chapters on to campus is a short term fix to Greek Community growth	3.0;1.0;4.0
Members of the Greek Community pose the same risks as students outside the Greek Community	3.0;1.0
New fraternities/sororities that attempt to enter university affiliation should have stricter policies to enter	3.0;1.0
The administrations' intention for Greek Life are different from the intentions of the Greek Community	3.0;1.0
The Chapter of Excellence program has a lobbying effect and doesn't favor the top performers	3.0;1.0

Table 4.18

Organizational Beliefs Groupings (Continued)

Organizational Beliefs	Grouping
The Greek Community is fully responsible for the criticism of others	2.0;1.0
The Greek Village is attractive for recruitment	1.0;3.0
The Greek Village would help to market university	1.0;3.0
The media is the primary cause for the poor reputation	2.0;4.0
The state of the economy is driving the price of dues up	2.0;3.0
The university has more power over chapters than the national headquarters	3.0;1.0;4.0
University passes incidents of individual students onto the chapter	2.0;4.0
Working with the university administration is a lost cause	3.0;1.0;2.0

Aspirations

Perhaps the most important piece of this study is that of aspirations for Greek Life. The aspirations were considered the vision nodes within the network. The aspirations network is an agent by aspirations matrix. Each respondent was asked to rate their support towards a future goal for the state of Greek Life. Specifically, they were asked "which of the following would you like to see Greek Life achieve?"

Table 4.19 identifies the average level of support for each future aspiration on a scale from 5 to -5, allowing for neutral responses (rating of 0). The top three ratings appear to have steadfast support. It appears that the entire leadership is adamant about maintaining the current recruitment structure and to promoting the top leaders on campus within the Greek Community.

Table 4.19

Average Support – Greek Life Aspirations

Rank	Greek Life Vision	Value
1	No rush deferral	4.53846
2	Be top leaders on campus	3.62963
3	More info about future members during recruitment	3.51852
4	Continue homecoming traditions	3.14815
5	IFC/Panhel Collaboration	2.96296
6	IFC GPA higher than All-Male	2.7037
7	Build brand as polished students	2.44444
8	Tighten standards for new chapters to enter	2.44444
9	No alcohol incidents	2.25926
10	Social event equality	2.14815
11	Build Greek Village	1.77778
12	Grow Greek Life population	0.74074

Table 4.20 identifies the aspirations with the greatest variation of support. This does not necessarily suggest that these aspirations have a population of non-supporters, but rather that there is variation of the degree of support or non-support. It appears that the top two aspirations with the largest variation are ones that encourage growth of the Greek infrastructure: building a Greek Village and growing the Greek population.

Table 4.20

Most Contentious Aspirations

Rank	Greek Life Vision	Value
1	Build Greek Village	3.358
2	Grow Greek Life population	2.974
3	IFC GPA higher than All-Male	2.864
4	No alcohol incidents	2.683
5	Tighten standards for new chapters to enter	2.497
6	Continue homecoming traditions	2.414
7	Social event equality	2.316
8	Build brand as polished students	2.162
9	Be top leaders on campus	1.794
10	More info about future members during recruitment	1.783

Table 4.21 identifies the most strongly supported aspirations. Similar to the average values listed in Table 4.19, the top two aspirations remain the same, with some level of variation for the remaining aspirations.

Table 4.21

Most Strongly Supported Aspirations

Rank	Greek Life Vision	Value
1	No rush deferral	4.37
2	Be top leaders on campus	3.778
3	IFC GPA higher than All-Male	3.741
4	Continue homecoming traditions	3.741
5	More info about future members during recruitment	3.519
6	Build Greek Village	3.333
7	IFC/Panhel Collaboration	3.111
8	Tighten standards for new chapters to enter	3.037
9	No alcohol incidents	2.926
10	Build brand as polished students	2.889

Table 4.22 identifies the agents with the strongest opinions about each aspiration. The interview phase of this study identified twelve key future aspirations for the Greek Community. The highest possible score attained, then, is a 60. Interestingly, the top five most opinionated agents are within approximately 10 points of the highest possible score attained.

Table 4.22

Most Opinionated Agents – Aspirations

Rank	Agent	Value
1	Agent H	57
2	Agent V	54
3	Agent D	52
4	Agent U	52
5	Agent G	49
6	Agent J	46
7	Agent P	45
8	Agent A	44
9	Agent L	44
10	Agent O	44

Table 4.23 identifies the most neutral supports. It is evident that not everyone shares the same level of opinion with respect to future aspirations.

Table 4.23

Most Neutral Agents – Aspirations

Rank	Agent	Value
1	Agent AA	23
2	Agent S	27
3	Agent W	28
4	Agent N	29
5	Agent X	30
6	Agent R	30
7	Agent F	30
8	Agent Y	31
9	Agent E	35
10	Agent I	39

Aspirations groupings. Table 4.24 identifies the cluster groupings for future Greek Life aspirations. Three cluster groups emerged, which is the smallest number of clustering of nodes to this point. The first cluster is categorized as growing the infrastructure of Greek Life. These respondents are most likely to support the building of the Greek Village, growing the Greek Life population and avoid deferring rush. The Cluster Group 2 appears to want to secure the future of Greek Life. In doing so, they wish to rebrand the Greek student while practicing caution with allowing students into the Greek community that could potentially damage the new brand. They are also most likely to support homecoming traditions, one of the most focal activities on campus that the

Greek Community contributes to. Cluster Group 3 appears to want to unify and collaborate within the Greek Community while reducing the risk of potential future concerns. Unlike Cluster Group 2 that wants to manage who becomes a member, Cluster Group 3 wants to ensure the avoidance of alcohol risk while promoting scholarship, which are two key components that risk the future of Greek Life.

Table 4.24

Greek Life Aspirations Groupings

Future Aspirations	**Group**	**Thematic Category**
Build Greek Village	1	Grow infrastructure
No rush deferral	1	
Grow Greek Life population	2	
Build brand as polished students	2	Secure future
Continue homecoming traditions	2	
Tighten standards for new chapters to enter	2	
More info about future members during recruitment	2	
Be top leaders on campus	3	Collaborate and reduce risk of potential future threats
IFC/Panhel Collaboration	3	
Social event equality	3	
IFC GPA higher than All-Male	3	
No alcohol incidents	3	

Belief Propagation

A method called belief propagation, which applies Friedkin's social influence algorithm (1998), was used to address the second research question. Belief propagation was discussed in Chapter 3, but in summary, the output identifies the most strongly held beliefs, the most common beliefs, the most opinionated individuals, the most neutral individuals, and the individuals most likely to change their minds (Carley, 2010). More importantly for this analysis, the belief propagation analysis simulates changes in beliefs over time and shows who influenced whom at which time period. Since this research seeks to answer "how does social and relational influence and knowledge interaction impact the beliefs of agents within an organization", belief propagation is the optimal tool to match this need.

Table 4.25 is a summary of the most common beliefs within the Meta-Network. Surprisingly, the most common beliefs held by agents are all positive. The top two most agreed upon beliefs are very telling. First, all presidents agree that chapters that commit a university offense should be held responsible rather than the entire Greek Community. It is not surprising that presidents feel it unfair that every chapter assumes discipline for the actions of one, but this would also reduce the rate of interdependency. Second, all presidents agree that they are at the "top of the liability chain." In other words, if an incident happens within their chapter, as the leader, the responsibility falls on them.

Table 4.25

Most Commonly Shared Beliefs

Rank	Belief	Value	% of believers
1	Fraternities/sororities that commit a university offense should be solely responsible, not the entire Greek community	Positive	100%
2	Chapter presidents are at the top of the liability chain	Positive	100%
3	Greeks are held to a higher standard with respect to student incidents as opposed to non-Greeks	Positive	93%
4	Greek presidents are over-encumbered with day-to-day tasks	Positive	89%
5	The administrations' intention for Greek Life are different from the intentions of the Greek Community	Positive	85%
6	The Greek Village is attractive for recruitment	Positive	81%
7	The Greek Village would help to market university	Positive	81%
8	The university has more power over chapters than the national headquarters	Positive	81%
9	Fraternities and Sororities are complimentary/contribute benefits to each other	Positive	81%
10	The administration does not work/collaborate with IFC/Panhel, they just dictate and enforce policy	Positive	78%

Table 4.26 identifies the most contentious beliefs within the Meta-Network. Contention is a measure of variation in beliefs. In other words, the higher the contention, the more possible disagreement occurs. Two key sources of contention exist. First, a great deal of the contentious behavior relates to the Greek Community's relationship with University administration. There is significant variation with respect to the value of working with the administration and in feelings of how the administration treats Greeks. This can likely be explained by two reasons. First, it is possible that those with strong opposition have limited information about the relationship with the administration. Either

these agents are disconnected from the administration or they do not regularly discuss Greek Life affairs with those who do speak with the administration. Second, it is possible that this attitude is a measure of personal or organizational experience in working with administration. Those who have poor experiences are probably unlikely to change their opinion regardless of the circumstances.

The second most commonly contended belief set relates to major decisions that will influence Greek Life in the future. This is not surprising; given the varying effect these decisions might have on organizations. For example, the Greek Village is a prevalent topic of discussion while also a high level topic of disagreement. Evidence has been shown throughout this study which suggests that many agents feel the Greek Village is a threat to their independence. Additionally, some chapters may not have the resources to support living in the Greek Village, nor might they have the sheer numbers to fill a housing space. Other chapters see no need for a Greek Village--chapters that currently have a house may oppose the Greek Village, for example. To an extent, it would be nonsensical to want another house when the chapter already has significant equity in their own property.

Table 4.26

Most Contentious Beliefs

Rank	Belief	Value
1	Working with the university administration is a lost cause	3.155
2	Members of the Greek Community pose the same risks as students outside the Greek Community	2.93
3	The Greek Village is attractive for recruitment	2.837
4	The Chapter of Excellence program has a lobbying effect and doesn't favor the top performers	2.733
5	University passes incidents of individual students onto the chapter	2.705
6	The university has more power over chapters than the national headquarters	2.672
7	Greek Leaders are forced into positions by the administration that damage rapport with chapter	2.612
8	Letting new chapters on to campus is a short term fix to Greek Community growth	2.606
9	The Greek Village would help to market the university	2.573
10	The university is reactionary rather than proactive with respect to incidents	2.568

The most strongly held beliefs are listed in Table 4.27. The value listed is the average rating on a Stapel scale (allowing for a neutral response) from -5 to +5. Most strongly held beliefs parallel those of the most commonly shared beliefs. While variation in beliefs is relatively high, they appear to also be the most strongly held. In other words, it is likely uncommon to see high levels of contention with beliefs that do not have a strong potential impact, thus is highly likely to invite very strong opinions.

Table 4.27

Most Strongly Held Beliefs

Rank	Belief	Value
1	Chapter presidents are at the top of the liability chain	4.481
2	Greeks are held to a higher standard with respect to student incidents as opposed to non-Greeks	4.111
3	The Greek Village would help to market university	3.926
4	Fraternities/sororities that commit a university offense should be solely responsible, not the entire Greek community	3.889
5	The Greek Village is attractive for recruitment	3.889
6	Members of the Greek Community pose the same risks as students outside the Greek Community	3.63
7	The university has more power over chapters than the national headquarters	3.259
8	Greek presidents are over-encumbered with day-to-day tasks	3.111
9	Fraternities and Sororities are complimentary/contribute benefits to each other	3.037
10	University passes incidents of individual students onto the chapter	3

Table 4.28 and 4.29 detail the most opinionated agents and the most neutral agents respectively. Each measure is calculated as the absolute value sum of all belief ratings. Since there are 26 beliefs, the highest possible score is 130. Interestingly, the most opinionated agents are not very far from the highest level possible.

Table 4.28

Most Opinionated Agents

Rank	Agent	Value
1	Agent L	101
2	Agent J	99
3	Agent M	97
4	Agent H	96
5	Agent K	96
6	Agent O	96
7	Agent V	94
8	Agent G	93
9	Agent D	92
10	Agent E	88

Table 4.29

Most Neutral Agents

Rank	Agent	Value
1	Agent AA	30
2	Agent Y	55
3	Agent U	55
4	Agent B	55
5	Agent R	58
6	Agent N	59
7	Agent Z	61
8	Agent F	61
9	Agent X	64
10	Agent W	66

Simulated Beliefs Over Time

The above metrics are a snapshot of leader-related beliefs in the first time period. What is also important to identify in the belief propagation analysis is to what degree to these beliefs will likely shift. The belief propagation simulation enables us to simulate how beliefs change within the Meta-Network over time.

The belief propagation analysis was run on the top ten beliefs with the highest initial contention scores. Table 4.30 shows the Meta-Network contention values in Time 1 and the contention scores in the final time.

Table 4.30

Belief Propagation Simulation – Time One vs. Final Time

Rank	Belief	Value - Time 1	Value – Final	% Change
1	Working with the university administration is a lost cause	3.155	1.922	-39.10%
2	Members of the Greek Community pose the same risks as students outside the Greek Community	2.93	2.183	-25.48%
3	The Greek Village is attractive for recruitment	2.837	2.124	-25.11%
4	The Chapter of Excellence program has a lobbying effect and doesn't favor the top performers	2.733	1.556	-43.04%
5	University passes incidents of individual students onto the chapter	2.705	2.102	-22.31%
6	The university has more power over chapters than the national headquarters	2.672	1.944	-27.25%
7	Greek Leaders are forced into positions by the administration that damage rapport with chapter	2.612	1.744	-33.22%
8	Letting new chapters on to campus is a short term fix to Greek Community growth	2.606	1.756	-32.63%
9	The Greek Village would help to market the university	2.573	2.047	-20.46%
10	The university is reactionary rather than proactive with respect to incidents	2.568	1.499	-41.63%

When interaction of beliefs is enabled, all of the most contentious beliefs begin to neutralize. All contention values decrease from between 20% to larger than 40%. Visiting several belief examples individually, it appears that the beliefs of agents seem to converge on a final contention point, and this convergence occurs early in the time series.

The first belief assessed is a currently highly contentious concept of leaders collaborating with the university. As is observed from Table 4.26, this is the most

contentious of all beliefs. Figure 4.2 shows the propagation of beliefs over iterated time periods.

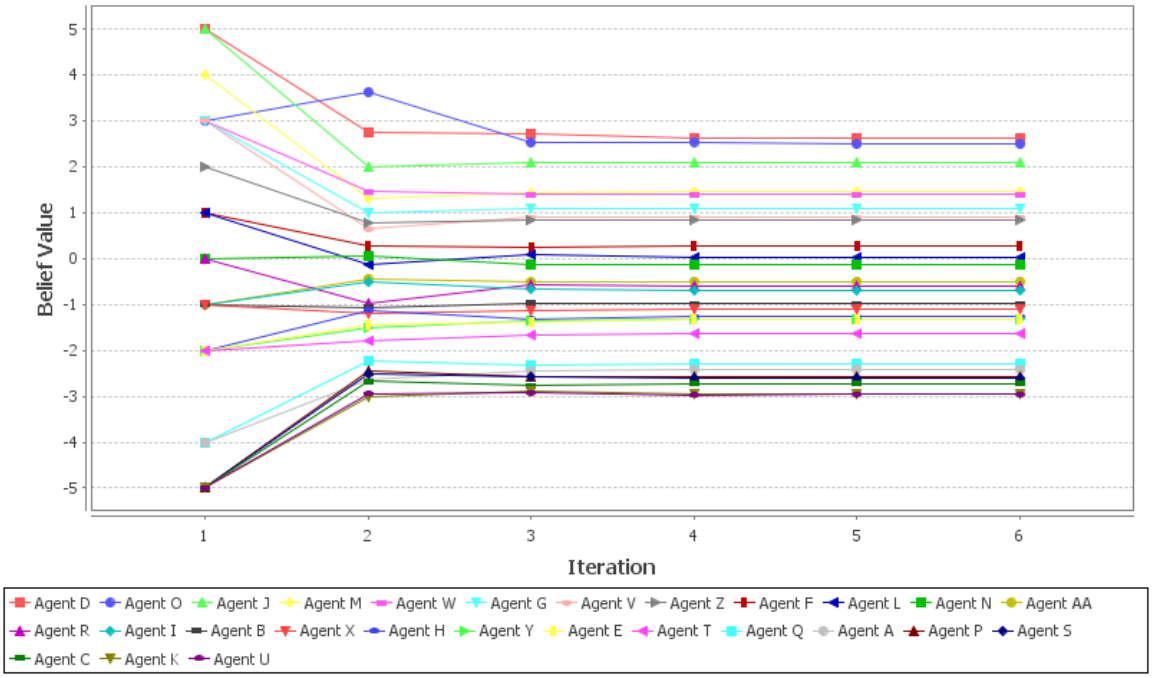

Figure 4.2

Propagation of belief "Working with the university is a lost cause"

As observed by Figure 4.2, beliefs converge on a final belief very early in the simulation. The greatest shifts in belief come from those who have extreme feelings about working with the administration in both the positive and negative spectrum. Seemingly, individual beliefs begin to neutralize when they begin to interact with those who have differing or lower feelings about the belief. Table 4.31 shows the agents within the Meta-Network that changed their minds during the simulation, as well as which agent

played a role in their belief switch. One agent, Agent L, switched twice, and eventually returned to the originally held belief level.

Table 4.31

Agents who Changed Opinions – "Working with the university administration is a lost cause"

When (iteration)	Who changed	Type of change	Cause of change
1	Agent L	Positive to negative	Agent E (23%), Agent Q (15%), Agent P (15%)
1	Agent R	Strong negative	Agent S (22%), Agent U (22%), Agent Q (17%)
2	Agent L	Negative to positive	Agent O (60%), Agent W (15%), Agent J (12%)
2	Agent N	Positive to negative	Agent K (23%), Agent U (21%), Agent X (12%)
2	Agent AA	Strong negative	Agent Y (100%)

Five major changes occurred at some point during the simulation. Four of the five agents switched from positive to negative or increased the strength of their negative view. All but one agent was influenced by three other agents, suggesting that it takes more than one individual to cause a dramatic shift in belief.

The next belief analyzed deals with the Greek Village, by asking if leaders feel the Greek Village would be an effective tool for new member recruitment. As seen previously in this chapter, this has been a controversial topic. Interestingly, while it is one of the most contentious beliefs, it is also one that has the lowest level of convergence on a final belief. Figure 4.3 shows the trend of convergence for this belief.

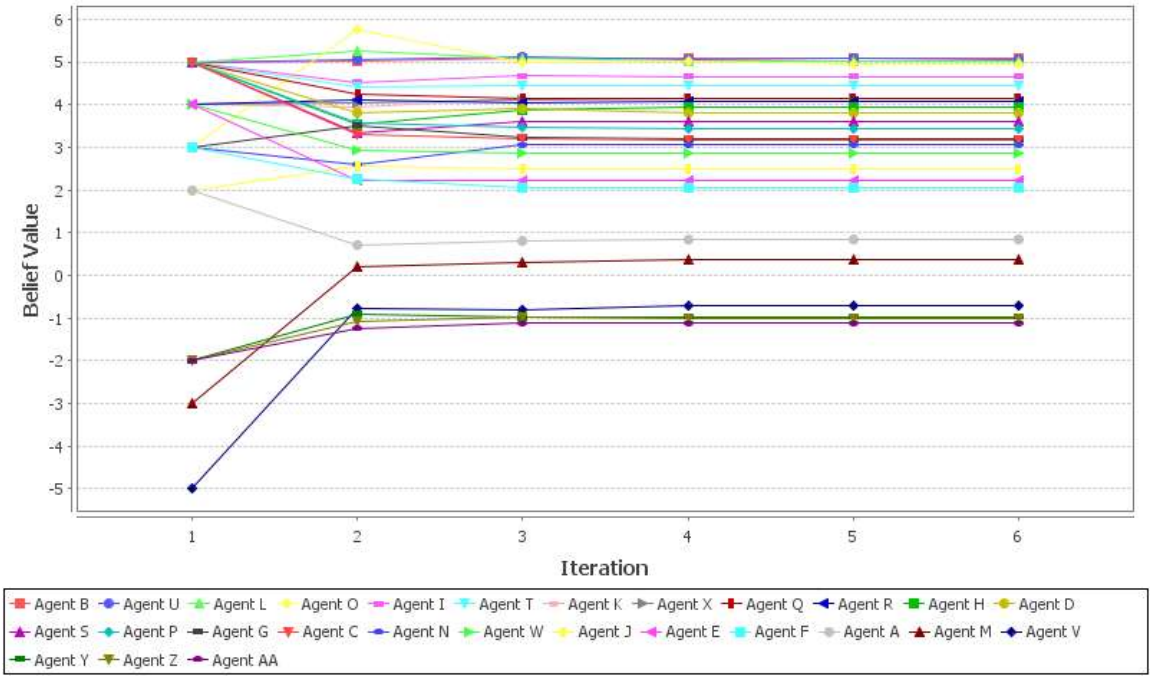

Figure 4.3

Propagation of belief "Greek Village is attractive for recruitment"

Unlike the belief about working with administrators, only a few people experience significant change on. While the first belief exhibited two extreme positions that converged in the middle, this belief reaffirms those with positive feelings while the extreme disbelievers have shifted toward the middle. In other words, those with strong positive beliefs stood firm to their beliefs while those with negative beliefs made adjustments in their view. In a real-world scenario, this is likely due to two reasons. First, it is possible that those with limited information or knowledge may have a preconceived notion on this topic, and when they gained additional information, they adjusted their feelings on the subject. The second likely cause is, since only six people in the leadership

community felt negatively about this belief, they may have felt outnumbered and, as a result, conceded their feelings for the best of the organization. Within the entire propagation, only one agent (Agent M) changed their minds at any given time.

The third belief analyzed is that of the chapter growth, and the idea that letting new chapters enter campus is a short term fix for the growth efforts of Greek Life. Figure 4.4 displays the results of the belief propagation simulation.

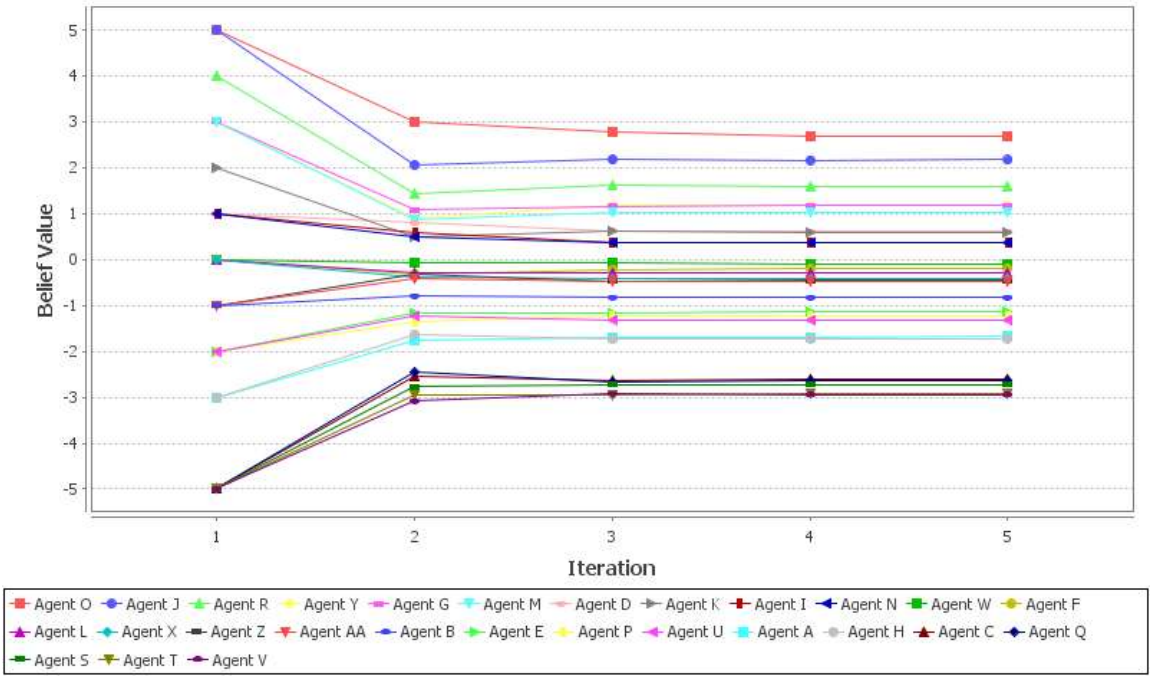

Figure 4.4

Propagation of belief "Accepting new chapters is a short term fix to growth"

This belief plot looks similar to the first plot – there is a great deal of initial contention, while those with extreme negative values move toward neutral, and do so

early on in the simulation. Additionally, there are around the same number of believers as there are non-believers, but by the final time period, agents seem to be more open minded to the opinions of others.

The fourth belief plot returns to the general idea of working with the university administration. It deals with beliefs that the university passes incidents of students involving to the chapter. Figure 4.5 shows the simulation of this belief.

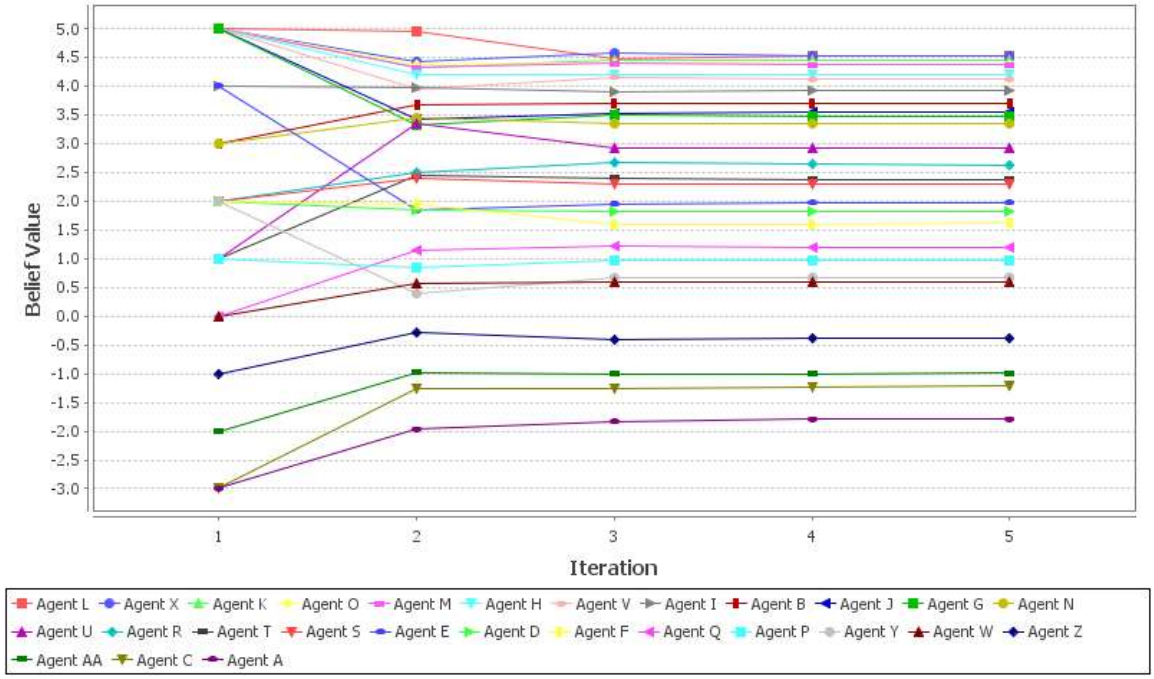

Figure 4.5

Propagation of belief "The university passes off incidents of students on to chapter"

This belief is interesting and unique in a way. First, there are only 4 non-believers, so contention is high, but to a degree that is different according to the strength

of the belief. Those with negative views show moderation toward the neutral point. Interestingly, however, most of those with strong beliefs maintain them: Only three major negative belief shifts occur , these involve Agent Q, Agent W and Agent Y.

Perhaps what is most interesting about these simulations is that, of all 26 beliefs simulated, only three did overall showed increases in the levels of contention. The first of these is the idea that chapters that commit an offense should be solely responsible. Figure 4.6 shows the result of the propagation for this belief.

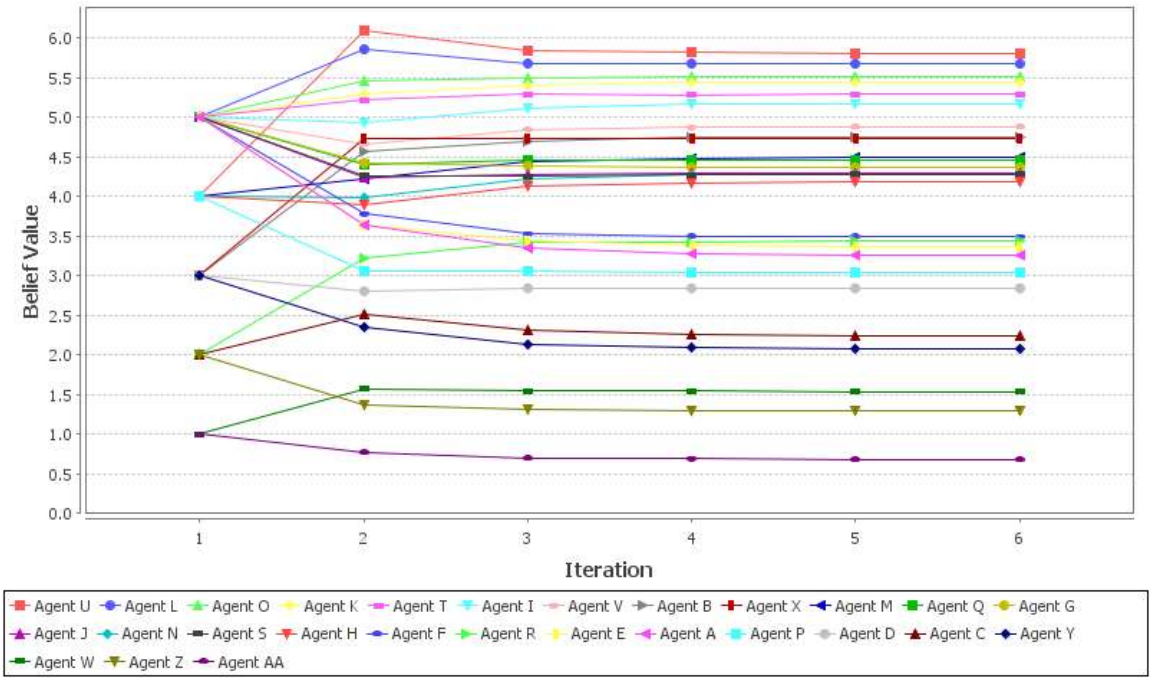

Figure 4.6

Propagation of belief "Chapters who commit incidents should be solely responsible"

There are two unique observations that appear in this simulation. First, at no point in the run does any one agent change his or her belief (from positive to negative or vice versa). Second, there is not a single non-believer agent in the Meta-Matrix (scores less than 0). In fact, only 3 agents finish below an agreement level of 2 during the simulation. Although contention increases 11% overall (1.388 to 1.529), the most significant increases occur in the positive direction.

The second belief that exhibits an increase in contention is that of Greeks being held to higher standards with respect to student incidents than non-Greeks. Figure 4.7 shows the plot for this belief. The same trend exists as the previously discussed belief. First, there are no non-believers (scores less than 0), and a majority of agents feel strong positive about this belief. Second, as seen in the previous belief, no agent changes their opinion in the simulation (from positive to negative).

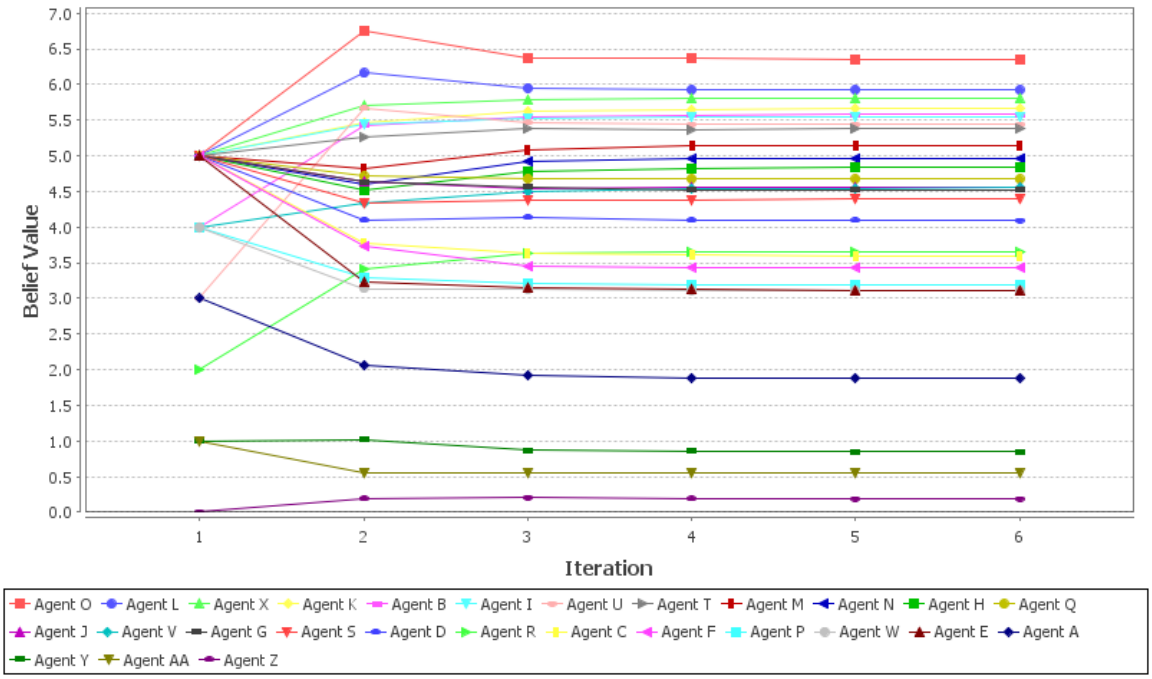

Figure 4.7

Propagation of belief "Greeks are held to higher standards than non-Greeks"

The third belief that shows a positive increase in contention is that of leaders believing they are at the top of the liability chain. Figure 4.8 shows the plot for this belief. Similar to the previous two beliefs analyzed, this belief also has no non-believers (scores less than 0), and again, no individuals reportedly had impact on altering beliefs of others. Perhaps what is most interesting about this belief is that, not only does everyone buy into this belief, but 20 out of the 27 agents rated this belief to the highest value allowed. As a result, when agents interact, the beliefs of many agents become extreme (above a 5).

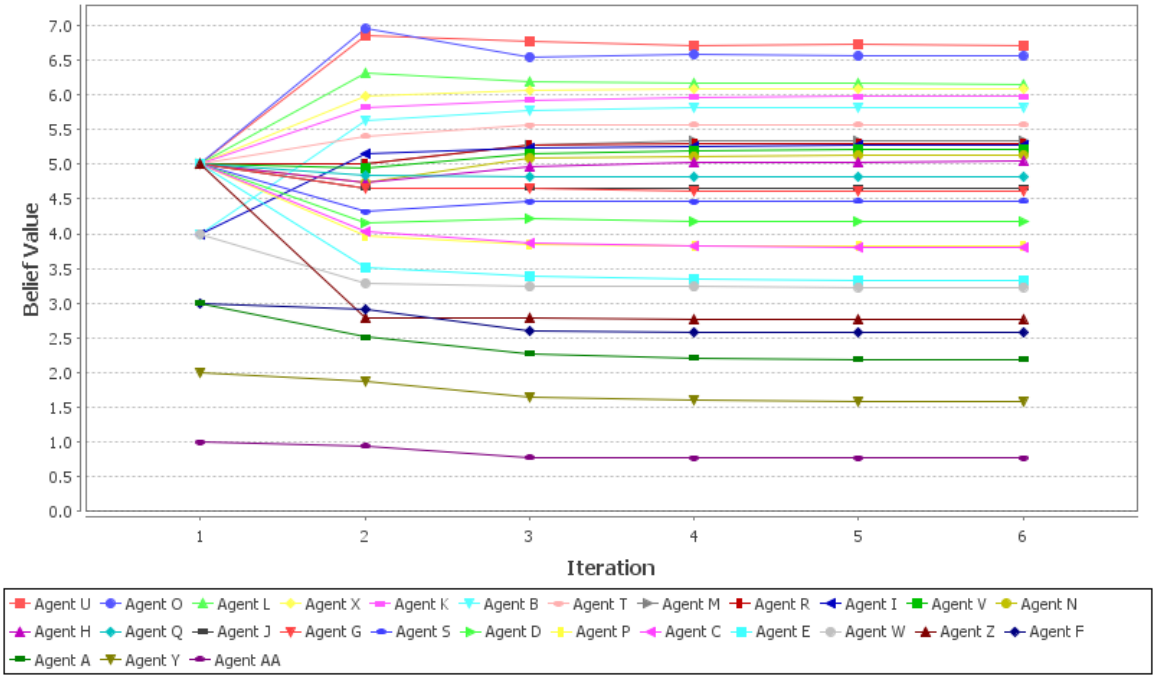

Figure 4.8

Propagation of belief "Greek presidents are at the top of the liability chain"

Belief clustering anomaly. After running several belief propagation reports, more may be explained of the belief clustering anomaly from the previous section on entity groupings. Since it appears that beliefs tend to converge and neutralize after interaction is enabled, it may be possible that beliefs are more inclined to group naturally after interaction occurs. Table 4.32 displays the results of grouping beliefs after interaction occurs. It appears that, once interaction is enabled, and beliefs begin to converge at the organizational level (as opposed to the beliefs of the individual), beliefs begin to cluster naturally.

Perhaps what may be even more interesting is to explore the individuals which most align with each belief cluster. Since there appears to be no clear patterns of belief groupings, perhaps the beliefs group naturally due to the individuals they are most tied to. As observed in Table 4.32, there are only 3 belief clusters, which is surprising since there are 26 beliefs in total. So to explore the relationship of beliefs with agents, a Key Entity report was run. Table 4.33 shows the results of a Key Entity report after agents exchange beliefs.

Belief cluster 1 is composed of only four beliefs. What is worth noting is that these four beliefs group with 7 unique agents. It is observed that five of the seven agents in this cluster group are highly opinionated, while two are highly neutral. Thus, belief clusters appear to group around emergent patterns of individuals. The same key entity report did not indicate that these beliefs clusters were highly contentious or most strongly held. Therefore, it is apparent that this cluster is a product of the agents themselves. Belief Cluster Group 2 is composed of 8 beliefs and 11 agents. This group is the most diversified of the three, as three are highly opinionated, two are highly neutral and the remaining six do not fit into either category. Belief Cluster Group 3 is composed of 14 beliefs and 9 agents. Of the 9 agents, 7 are highly neutral.

It is apparent that organizational beliefs are a product of evolutionary agent interaction. It is likely that the 4 beliefs in Cluster Group 1 are strongly held by this group. Cluster Group 2 is likely to debate the beliefs within their group, and likely arrive at a neutral value. Cluster Group 3 is likely to view these beliefs from a neutral perspective.

Table 4.32

Beliefs Clusters – After Agent Interaction

Organizational Beliefs	**Group**
The state of the economy is driving the price of dues up	1
University police profile Greeks students	1
The administrations' intention for Greek Life are different from the intentions of the Greek Community	1
Greek presidents are overencumbered with day-to-day tasks	1
Fraternities/sororities that commit a university offense should be solely responsible, not the entire Greek community	2
The Greek Village is attractive for recruitment	2
The Greek Village would help to market the university	2
Greeks are held to a higher standard with respect to student incidents as opposed to non-Greeks	2
University passes incidents of individual students onto the chapter	2
Fraternities and Sororities are complimentary/contribute benefits to each other	2
Chapter presidents are at the top of the liability chain	2
New fraternities/sororities that attempt to enter university affiliation should have stricter policies to enter	2
The administration does not work/collaborate with IFC/Panhel, they just dictate and enforce policy	3
Working with the university administration is a lost cause	3
The Greek Community is fully responsible for the criticism of others	3
Greek awards favor certain chapters over others	3
The university has more power over chapters than the national headquarters	3
Greek Leaders are forced into positions by the administration that damage rapport with chapter	3
The media is the primary cause for the poor reputation	3

Table 4.32

Beliefs Clusters – After Agent Interaction (Continued)

Organizational Beliefs	**Group**
Letting new chapters on to campus is a short term fix to Greek Community growth	3
IFC and Panhel should be treated separately with respect to incidents	3
As a president, there is no luxury of deciding which tasks they want to complete	3
Greek Life is the first impression of Clemson for incoming students	3
The Chapter of Excellence program has a lobbying effect and doesn't favor the top performers	3
The university is reactionary rather than proactive with respect to incidents	3
Members of the Greek Community pose the same risks as students outside the Greek Community	3

Table 4.33

Clusters by Agent Opinion

Agent	Cluster	Belief Stance
Agent D	1	Highly Opinionated
Agent G	1	Highly Opinionated
Agent J	1	Highly Opinionated
Agent L	1	Highly Opinionated
Agent O	1	Highly Opinionated
Agent W	1	Highly Neutral
Agent M	1	Highly Neutral
Agent K	2	Neither
Agent X	2	Neither
Agent T	2	Neither
Agent B	2	Neither
Agent Q	2	Neither
Agent C	2	Neither
Agent H	2	Highly Opinionated
Agent V	2	Highly Opinionated
Agent A	2	Highly Opinionated
Agent AA	2	Highly Neutral
Agent Y	2	Highly Neutral

Table 4.33

Clusters by Agent Opinion (Continued)

Agent	Cluster	Belief Stance
Agent U	3	Highly Opinionated
Agent P	3	Highly Opinionated
Agent S	3	Highly Neutral
Agent N	3	Highly Neutral
Agent X	3	Highly Neutral
Agent R	3	Highly Neutral
Agent F	3	Highly Neutral
Agent E	3	Highly Neutral
Agent I	3	Highly Neutral

Entity Removal

The third guiding question in this research deals with the effects of removing potentially threatening entities, and estimating resultant change in organizational vision. For this set of simulations, a tool within ORA called Immediate Impact is utilized. Immediate Impact reports allow us to ask "what if?", and as a result, observe the network change due to the removal of key nodes. Immediate Impact serves to isolate the key entities within the Meta-Network to determine the overall effect on key metrics (Carley, 2010). Three of the most popular topics and points of concern deal with the relationship with the university administration, the Greek Village and alcohol abuse. As a result, a simulation is run to identify the effects of removing each concern individually. Next, two

conceptual entities, disconnect with university administration and disconnect within the Greek Community, are removed from the Meta-Network.

Concern with administration. Results from the removal simulation are displayed in Table 4.30. Nodes with the highest degree of Centrality imply the highest degree of concern interaction within the vision network. In other words, these are the concerns that are most central in the network, suggesting that they have the most connection to other agents, thus being highly influential.

As can be observed from Table 4.34, the entity, growing the Greek Life population, possesses the highest centrality among all concerns within the network. Thus, this concern node has the highest potential to influence the goals and aspirations of Greek Life. Upon removal of a key concern node (fear of losing bargaining power with the administration), a multitude of changes occur. While few changes appear dramatic, three aspirations show levels of relief from potential concern. Interestingly, however, other areas of vision increase in their level of centrality within the network. In other words, concerns have now shifted towards other aspirations. A positive increase in concern centrality is reflected in nine of twelve total aspirations. Interestingly, these aspirations are all related to improving Greek Life.

Table 4.34

Greek Life Aspirations with Concern Interaction

	Centrality - Pre Impact	Centrality - Post Impact	% change
Grow Greek Life population	0.5	0.529	6%
Build Greek Village	0.444	0.412	-7%
IFC GPA higher than All-Male	0.444	0.471	6%
Build brand as polished students	0.389	0.412	6%
Social event equality	0.389	0.412	6%
Continue homecoming traditions	0.333	0.353	6%
No rush deferral	0.333	0.353	6%
Tighten standards for new chapters to enter	0.333	0.353	6%
No alcohol incidents	0.278	0.294	6%
Be top leaders on campus	0.167	0.176	5%
IFC/Panhel Collaboration	0.167	0.176	5%
More info about future members during recruitment	0.167	0.176	5%

Concern with Greek Village. Table 4.35 shows the results of the removal of concern about creating a Greek Village, specifically the concern that the housing would be used a means to micro-manage chapters. This simulation suggests that the removal of this concern shifts the priorities of respondents somewhat. Concern centrality regarding use of housing is now .412, reflecting a 7% decline in overall interaction concerning this issue. However, all other concerns gained an increase in centrality as a result, as seen in

the % change column of Table 4.35. It is evident that removing this concern alone does little to reduce burden towards the aspirations of Greek leadership.

Table 4.35

Concern Removal – Concern over Greek Village Used to Micro-Manage Greek Life

	Centrality - Pre Impact	**Centrality - Post Impact**	**% change**
Grow Greek Life population	0.5	0.529	6%
Build Greek Village	0.444	0.412	-7%
IFC GPA higher than All-Male	0.444	0.471	6%
Build brand as polished students	0.389	0.412	6%
Social event equality	0.389	0.412	6%
Continue homecoming traditions	0.333	0.353	6%
No rush deferral	0.333	0.353	6%
Tighten standards for new chapters to enter	0.333	0.353	6%
No alcohol incidents	0.278	0.294	6%
Be top leaders on campus	0.167	0.176	5%
IFC/Panhel Collaboration	0.167	0.176	5%
More info about future members during recruitment	0.167	0.176	5%

Removal of alcohol abuse. Table 4.36 shows the results of removing the concern about alcohol abuse. While it is unlikely in a real-world setting to eliminate this entirely, it may be possible to lessen the concern. The removal of this node from the network dynamic reduces the concern centralities of a key concept: eliminating the chance of

another alcohol incident. Other aspiration nodes within the network show trends similar to the previous two simulations: moderate increases in concern centrality across the board, with a few noteworthy declines. In the case of removing alcohol risk from the network, this appears to reduce to potential impact of aspiring to prevent alcohol incidents and to promote social equality.

Table 4.36

Concern Removal – Concern with Alcohol Abuse

	Centrality - Pre Impact	**Centrality - Post Impact**	**% change**
Grow Greek Life population	0.5	0.5294	6%
Build Greek Village	0.444	0.471	6%
IFC GPA higher than All-Male	0.444	0.471	6%
Build brand as polished students	0.389	0.412	6%
Social event equality	0.389	0.353	-9%
Continue homecoming traditions	0.333	0.353	6%
No rush deferral	0.333	0.353	6%
Tighten standards for new chapters to enter	0.333	0.353	6%
No alcohol incidents	0.278	0.235	-15%
Be top leaders on campus	0.167	0.176	5%
IFC/Panhel Collaboration	0.167	0.176	5%
More info about future members during recruitment	0.167	0.176	5%

Conceptual removal – concerns with the administration. The first three simulations identified the effects of removing key concern nodes. The next two simulations identify the effects within the network when all concerns oriented around the university administration are removed. Table 4.37 shows the results of this simulation. As compared to the previous three simulations, there are dramatic changes that occur within the Meta-Network. Stresses oriented around building the Greek Village, continuing homecoming traditions and alleviating the possibility of rush deferral are all removed. In reaction, the concern focus has now shifted towards aspirations related to improving relationships within Greek Life. The most significant increases reflect the goals of growing the Greek population, improving the IFC GPA, rebuilding the brand of Greek Life and promoting social event equality.

Table 4.37

Concern Removal – Concerns with Administration

	Centrality - Pre Impact	Centrality - Post Impact	% change
Grow Greek Life population	0.5	0.6429	29%
Build Greek Village	0.444	0.286	-36%
IFC GPA higher than All-Male	0.444	0.571	29%
Build brand as polished students	0.389	0.5	29%
Social event equality	0.389	0.5	29%
Continue homecoming traditions	0.333	0.286	-14%
No rush deferral	0.333	0.214	-36%
Tighten standards for new chapters to enter	0.333	0.429	29%
No alcohol incidents	0.278	0.357	28%
Be top leaders on campus	0.167	0.214	28%
IFC/Panhel Collaboration	0.167	0.214	28%
More info about future members during recruitment	0.167	0.214	28%

Conceptual removal – concerns with Greek member dissension. Now that we have seen the effects of removing a key concept (university administration), the other key concept, Greek member dissention, is removed. The results are shown in Table 4.38. While the removal of administration concerns showed noteworthy effects, the effects from removing Greek Life dissention are even more significant. A total of ten out of twelve nodes showed notable decreases in concern centrality within the Greek Life aspirations network. Some of the top decreases in concern centrality involved aspirations

that were highest on the priority list among Greek Life leaders. Notably, those of improving IFC grades and continuing homecoming traditions rank among the highest changes.

Table 4.38

Concern Removal – Concerns with Greek Life Dissention

	Centrality - Pre Impact	**Centrality - Post Impact**	**% change**
Grow Greek Life population	0.5	0.4667	-7%
Build Greek Village	0.444	0.4667	5%
IFC GPA higher than All-Male	0.444	0.333	-25%
Build brand as polished students	0.389	0.333	-14%
Social event equality	0.389	0.267	-31%
Continue homecoming traditions	0.333	0.2	-40%
No rush deferral	0.333	0.4	20%
Tighten standards for new chapters to enter	0.333	0.2	-40%
No alcohol incidents	0.278	0.267	-4%
Be top leaders on campus	0.167	0.2	20%
IFC/Panhel Collaboration	0.167	0.067	-60%
More info about future members during recruitment	0.167	0.133	-20%

In summary, it appears that the removal of single concern nodes simply shift the level of stress within the network towards other concerns. In a sense, it recoils to equilibrium. But when conceptual concerns are removed, large scale changes occur

which have major impacts on the potential burden on organizational aspirations. This makes sense, since concerns are primarily conceptual (and perceptions of agents within the network) themselves, that removing a single node of a conceptual component would simply shift the impact towards other concerns in the component. But when the concept itself is removed, major impacts occur within the network.

Removal of Pressures

As with the exercise performed on Greek Life concerns, several of the top pressures within the Greek Leadership community were removed. The pressures removed were those of the university administration, alumni, national headquarters and chapter members with negative attitudes.

Compared to the concerns network, it appears that the leadership pressures networks are more top heavy. If you recall, the concerns network centralities were more evenly distributed, while the pressures network have a few key nodes which have higher levels of centrality than the remaining nodes. Pressures appear to have the greatest impact towards the aspirations of building a brand of polished students, prevention of alcohol incidents and continuing homecoming traditions. In other words, pressure centralities are most tied to these aspiration nodes. It is worth noting that all of these goals are the most commonly agreed upon and were the most strongly held aspirations for Greek Life by the Greek leadership.

Removing the university administration pressure. A common theme within this research is the effects that university administration has on Greek leadership. Table

4.39 shows the results of the removal of university administration pressure from the network, meaning the university administration is no longer able to put pressure on agents with respect to Greek Life aspirations. While it appears at first glance that major changes have occurred within the aspirations network, this is deceiving. First, the aspirations with the highest level of pressure (highest pressure centrality) change very little in comparison. Notably, the pressure involving preventing any further alcohol incidents is very low. One would think that removing significant administrative pressure which is heavily focused on fixing issues with alcohol would create more noteworthy change. That is not the case, suggesting that while the administration puts heavy pressure on the Greek leadership to achieve this goal, they are one of many sources of pressure that do so. Perhaps the most significant changes occur in relieving pressure from continuing homecoming traditions and from collaboration between the two governing Greek councils.

Table 4.39

Pressure Removal – Pressures from Administration

	Centrality - Pre Impact	Centrality - Post Impact	% change
Be top leaders on campus	0.154	0.083	-46%
Build brand as polished students	0.5385	0.5	-7%
Build Greek Village	0.385	0.333	-14%
Continue homecoming traditions	0.462	0.417	-10%
Grow Greek Life population	0.154	0.083	-46%
IFC GPA higher than All-Male	0.308	0.25	-19%
IFC/Panhel Collaboration	0.231	0.167	-28%
More info about future members during recruitment	0.308	0.333	8%
No alcohol incidents	0.5385	0.5	-7%
No rush deferral	0.308	0.333	8%
Social event equality	0.231	0.25	8%
Tighten standards for new chapters to enter	0.154	0.167	8%

Removing national headquarters pressure. Table 4.40 shows the result of the removal simulation of national headquarters pressure. Only two noteworthy declines in other pressure centers occur. The first is the concern over IFC GPA, while the second is preventing alcohol incidents. While the pressure is slightly reduced for these two aspirations, other pressures within the network exhibit nearly a 10% increase. Therefore, it appears that by removing the pressure from National Headquarters, it realigns the effects of other pressures within the network, thus giving other pressures added centrality.

Table 4.40

Pressure Removal – Pressures from National Headquarters

	Centrality - Pre Impact	Centrality - Post Impact	% change
Be top leaders on campus	0.154	0.167	8%
Build brand as polished students	0.5385	0.5833	8%
Build Greek Village	0.385	0.417	8%
Continue homecoming traditions	0.462	0.5	8%
Grow Greek Life population	0.154	0.167	8%
IFC GPA higher than All-Male	0.308	0.25	-19%
IFC/Panhel Collaboration	0.231	0.25	8%
More info about future members during recruitment	0.308	0.333	8%
No alcohol incidents	0.5385	0.5	-7%
No rush deferral	0.308	0.333	8%
Social event equality	0.231	0.25	8%
Tighten standards for new chapters to enter	0.154	0.167	8%

Removing alumni pressure. Table 4.41 shows the result of removing Alumni pressures from the Greek leadership dynamic. Several noteworthy declines in pressure centers occur within the Meta-Network by removing Alumni pressures. First, avoiding rush deferral, the top leader-related aspiration, reports a 19% decrease in total pressure centrality. The same can be said of two other top aspirations: continuing homecoming traditions, which reports a 10% decrease, while improving the IFC GPA declines 19%.

Table 4.41

Pressure Removal – Pressures from Alumni

	Centrality - Pre Impact	Centrality - Post Impact	% change
Be top leaders on campus	0.154	0.167	8%
Build brand as polished students	0.5385	0.5	-7%
Build Greek Village	0.385	0.333	-14%
Continue homecoming traditions	0.462	0.417	-10%
Grow Greek Life population	0.154	0.167	8%
IFC GPA higher than All-Male	0.308	0.25	-19%
IFC/Panhel Collaboration	0.231	0.25	8%
More info about future members during recruitment	0.308	0.333	8%
No alcohol incidents	0.5385	0.5	-7%
No rush deferral	0.308	0.25	-19%
Social event equality	0.231	0.25	8%
Tighten standards for new chapters to enter	0.154	0.167	8%

Removing negative chapter attitude pressure. Table 4.42 shows the results of removing negative chapter attitudes from the Meta-Network. Several noteworthy pressure declines occur. First, as with the removal of alumni, the pressure of rush deferral decreases 19%, while continuing homecoming traditions declines 10%. Two other aspirations with relatively low activity also show declines: social event equality and tightening standards of letting new chapters enter campus. What is also noteworthy is the 8% increase in pressure centrality with respect to preventing alcohol related incidents.

While this is already the greatest pressure center, its level of centrality climbs when the pressure of negative attitude is removed.

Table 4.42

Pressure Removal – Pressures from Chapter Members with Negative Attitudes

	Centrality - Pre Impact	**Centrality - Post Impact**	**% change**
Be top leaders on campus	0.154	0.167	8%
Build brand as polished students	0.5385	0.5	-7%
Build Greek Village	0.385	0.417	8%
Continue homecoming traditions	0.462	0.417	-10%
Grow Greek Life population	0.154	0.167	8%
IFC GPA higher than All-Male	0.308	0.333	8%
IFC/Panhel Collaboration	0.231	0.25	8%
More info about future members during recruitment	0.308	0.25	-19%
No alcohol incidents	0.5385	0.5833	8%
No rush deferral	0.308	0.25	-19%
Social event equality	0.231	0.167	-28%
Tighten standards for new chapters to enter	0.154	0.083	-46%

Structural and Behavioral Vision

In order to identify effective outcomes given differing structural patterns of vision, a different modeling approach is applied. A program designed at the CASOS institute at Carnegie Mellon University called Construct (Carley, 1990; Schrieber and

Carley, 2004) allows for customized experiments. Construct enables users to generate a simulated environment well suited for complex simulation modeling for the social sciences (Hirshman et. al, 2010). For this experiment, Construct is utilized to model different processes; these processes enable agents within the network to exchange knowledge. It is more efficient than experimenting on actual subjects given its ability to simulate changes that would be unethical, prohibitive, inflexible, or cost ineffective in live research conditions (St. Charles, 2010). Construct is an optimal fit for answering the final sub-question: "Which pattern of vision (uniform or fragmented) is most effective for organizational learning and task performance?"

Generated Environment

This set of experiments generates outcomes by altering certain parameters within the simulated network environment. Parameters in Construct are similar to independent variables in traditional quantitative data driven analysis. These independent variables are a subset of the model's total parameters; therefore, it is necessary to decide which parameters to manipulate and how altering these parameters may vary to produce differing outcomes. These outcomes serve as a dependent variable, or more properly termed for this research, a response variable.

The key entities within Construct are agents, knowledge and tasks. Agents can be grouped, thus an agent group is composed of a certain set of agents. For example, if a Construct environment had 3 agent groups of 25 members each, each group could represent a specific department of the business. Additionally, each department could have

a specific set of knowledge relevant to their department. This would be a knowledge set. Therefore, this department is responsible for certain tasks, thus a group of tasks, to which they use their specific knowledge set. They can also use different knowledge sets to complete their tasks, but there may be a specific set which is representative of the department itself.

For this experiment, a set of 50 agents are used, with no agent groups used. This means that each of the agents has the same level of association with each other within the network. This experiment utilizes 150 knowledge bits, but broken into two individual knowledge groups at 75 bits each. The first set serves as the pre-existing knowledge set required to perform day-to-day work related tasks. For ease of use, this set will be labeled the day-to-day knowledge. The day-to-day knowledge is assumed to be common knowledge, thus the initial level of knowledge is set to 50% at time period 1. The second set serves as a vision-related knowledge set that is injected into the network environment. Vision-related knowledge is a new idea injected into the network. Since new vision is an evolving concept, the initial vision-related knowledge level is set to 25%. Each set of knowledge is paired with a task set. The first task corresponds to the day-to-day knowledge. That is, agents must perform a set of day-to-day tasks, which require a certain level of day-to-day knowledge. These tasks require consistent transmission of an existing set of knowledge in order to effectively perform each day-to-day tasks. Vision-related knowledge is also paired with a task set. This set serves as newly emergent tasks that guide action in support of new organizational vision. The second set of tasks

corresponds with a set of tasks necessary to achieve action. This set of tasks is referred to as vision-related tasks.

Initial network conditions. As detailed prior, this experiment consists of 50 network agents, two knowledge sets of 75 knowledge bits each and two task sets of 25 tasks each. Within Construct, knowledge is diffused in one of two ways: through knowledge seeking interactions or task exchange interactions. Simply, agents communicate knowledge based on their alignment with others in the network. If agents are likely to interact because of their common tasks, they are highly likely to exchange information while performing mutual tasks together. Alternatively, agents can also be more inclined to exchange knowledge because they share the same knowledge. In a real-world condition, it is likely that individuals are more likely to communicate and share information with those they feel thinks similar to them (referred to as homophily).

The default condition for the knowledge sets allow for greater initial day-to-day knowledge. It is assumed that when new knowledge emerges within an organization, the level of organizational understanding of that knowledge is relatively new. Since each set of knowledge corresponds to a respective task set, each task is paired directly with required knowledge bits. Given this correspondence, for agents to successfully complete each task, they must possess the corresponding knowledge bit. In other words, an agent must have a certain level of knowledge to complete a task. The day-to-day tasks require a majority of knowledge to be from the existing day-to-day knowledge set, but allow for some level of overflow from the new knowledge set. The same is applied for the vision-related tasks; vision-related tasks are more likely to be successfully completed with a

higher level of vision related knowledge, while a certain level of existing knowledge enables increased overall performance. Table 4.43 shows the input conditions of each simulation run, specifically the parameter values. Table 4.44 shows the same parameters with respect to their categorical value.

Table 4.43

Simulation Parameters Values

	Default	**Experiment 1**	**Experiment 2**	**Experiment 3**
Organizational Complexity	0.25	0.25	0.5	0.75
Task Interdependency	0.25	.25, .5, .75	.25, .5, .75	.25, .5, .75
Knowledge Transmission Ratio	1	.25, .5, 1, 2, 4	.25, .5, 1, 2, 4	.25, .5, 1, 2, 4

Table 4.44

Categorical Simulation Parameters

	Default Conditions	**Experiment 1**	**Experiment 2**	**Experiment 3**
Organizational Complexity	Low	Low	Moderate	High
Task Interdependency	Low	Low, Moderate, High	Low, Moderate, High	Low, Moderate, High
Knowledge Transmission Ratio	No Transmission Preference	Highly prefer vision, Moderately prefer vision, No preference, Moderately prefer D2D, Highly prefer D2D	Highly prefer vision, Moderately prefer vision, No preference, Moderately prefer D2D, Highly prefer D2D	Highly prefer vision, Moderately prefer vision, No preference, Moderately prefer D2D, Highly prefer D2D

Structure of vision – uniform vs. fragmented. This experiment seeks to identify effective outcomes for given vision patterns, specifically the differences between uniform and fragmented patterns. For our purposes, structural fragmentation is the minimal level of interaction (organizational complexity = .25) that occurs within the network, thus many agents are fragmented from others. In other words, those with low levels of organizational complexity are in silos, meaning their information primarily comes from one source within the organization. Those with high levels of organizational complexity have high probabilities of interaction with most other agents in the network, thus being a more open network.

Structural fragmentation also exists when interaction favors knowledge exchange through one of two processes: through knowledge (task interdependency = .25) or through task interaction (task interdependency = .75) In other words, organizational structures with low levels of task interdependency are primarily knowledge seeking bodies. Those with high levels of task interdependency have little ability to seek knowledge, rather, agents are restricted by their knowledge conditioned on those which they share tasks. Uniform fragmentation assumes greater probabilities of interaction throughout the network (i.e., organizational complexity = .5 or .75) and a uniform probability of knowledge exchange via tasks or knowledge (i.e. task interdependency = 0.5).

From a behavioral perspective, behavioral fragment is the default value (knowledge transmission = 1) of knowledge transmission, meaning agents are equally

likely to diffuse either knowledge set. Behavioral fragmentation assumes that agents are more likely to exchange one knowledge set than another.

The experiment. Each run is simulated to 250 time periods. The conditions of the three input parameters are altered in this experiment, two of which are based on network structure while the other relates to agent behavior in exchanging knowledge. The first of three parameters is the network interaction probability, or organizational complexity. Three different levels of interaction are enabled. The default condition is 25% interaction. These conditions allow for different levels in which agents can potentially interact with other agents. By increasing organizational complexity, the probability that more people within the network will interact increases.

The second parameter is task interdependency, which suggests different levels of interaction probability and the resultant knowledge exchange based on shared tasks. Hirschman et. al (2010) suggest that people who work on the same tasks are more likely to interact, thus more likely to exchange knowledge. Simply, by increasing task interdependency, knowledge is exchanged through task interaction at an increasing rate. The third parameter value allows for variation in knowledge bit transmission. The default input value suggests that an agent is equally likely to exchange a knowledge bit from one set as they are from the other. An increase in either direction suggests an agent's preference to diffuse knowledge from a specific knowledge set. For example, if the knowledge transmission weight favors the day-to-day knowledge, then day-to-day knowledge is more likely to be diffused throughout the network. In other words, in this example, agents see communicating day-to-day knowledge as more important than

vision-related knowledge, or they place little value in exchanging new knowledge to complete tasks.

Two outcome values are generated through differing conditions within the network: knowledge diffusion and task performance. Knowledge diffusion is a measure of the average knowledge per agent over the total knowledge available within the network. As defined in this study, total new knowledge is calculated as the percentage of newly diffused knowledge within the network. Task performance measures the overall network's ability to successfully complete a task. Task performance is calculated by dividing the average number of tasks successfully completed by the total tasks assigned. In this experiment, the task assignment for both the day-to-day tasks and the vision-related tasks are equal, meaning the same number of tasks for each task group are attempted at each time period.

Simulation Results

Table 4.45 and Table 4.46 shows the results of the simulation runs. The results show that the weight agents place on vision-related knowledge is the key element in knowledge diffusion and task performance. Peak network performance is achieved when interaction probability is at its highest point while agents' interaction probabilities are evenly distributed between knowledge seeking and shared tasks. Moderate levels of task interdependency in this environment suggest that, while shared task relationships are important, they are equally as important as generating new knowledge based on agents

seeking out understanding from those with like knowledge. Subsequently, those with like knowledge are more inclined to share and exchange new knowledge.

In breaking the runs down to simulated organizational complexity levels, the findings differ. With natural network complexity at 25%, knowledge diffusion peaks when agents are slightly more likely (Knowledge Transmission Ratio = .5) to communicate vision-related knowledge than day-to-day knowledge. As expected, however, task performance peaks when transmission heavily favors vision-related knowledge.

At 50% network interaction probability, network diffusion and performance results differ somewhat. While an outcome of newly generated knowledge peaks when agents moderately favor vision-related knowledge, there are losses in overall task performance. Task performance peaks when task interdependency is moderate to low while knowledge heavily favors vision-related knowledge. It appears that, while the flow of information is high within the organization, agents are left to decide which knowledge to invest in (i.e., which knowledge to seek out) and as a result are not fully able to complete their tasks with optimal accuracy.

As discussed prior, overall network performance (new knowledge diffusion and task performance) peaks when moderate task interdependency is coupled with high levels of vision-related knowledge transmission. When network complexity is at its highest point in this simulation (75%), overall network performance is at its highest point as compared to other variable inputs. Interestingly, even when vision-related knowledge

reaches a higher point of understanding than day-to-day knowledge, task performance is still very high.

In summary, different patterns of vision allow for optimal outcomes. Behavioral structures in which agents place emphasis on exchanging vision-related knowledge, thus fragmented, allow for the most effective outcomes of knowledge diffusion and task performance. Additionally, organizational structures which enable uniformity with respect to knowledge exchange (thus, moderate task interdependency) coupled with high levels of organizational complexity allow for optimal patterns of new knowledge generation and task performance. That is, uniform organizational structure with fragmented behavioral patterns allow for optimal knowledge diffusion and task performance.

Table 4.45

Simulation Results – Knowledge Diffusion

Parameters		**Task Interdependency = .25**					**Task Interdependency = .5**					**Task Interdependency = .75**				
Knowledge Transmission Ratio		1	2	4	0.5	0.25	1	2	4	0.5	0.25	1	2	4	0.5	0.25
	ID	a	b	c	d	e	f	g	h	I	j	k	l	m	n	o
Organizational Complexity = .25	1	0.5542 (.09266)	0.4932 (.0834)	0.4217 (.0811)	0.5929 (.0877)	0.5711 (.0938)	0.5508 (.0887)	0.4873 (.0752)	0.4201 (.0796)	0.5903 (.098)	0.5649 (.0978)	0.5329 (.0846)	0.4823 (.0811)	0.4134 (.0713)	0.5631 (.0898)	0.5756 (.0849)
Organizational Complexity = .5	2	0.5825 (.0968)	0.5073 (.0738)	0.446 (.0718)	0.6148 (.0862)	0.5916 (.0981)	0.5073 (.0738)	0.5193 (.0866)	0.4559 (.0779)	0.6164 (.0960)	0.6081 (.0922)	0.586 (.0924)	0.5116 (.0817)	0.4481 (.0785)	0.6095 (.0925)	0.5983 (.0911)
Organizational Complexity = .75	3	0.5892 (.0882)	0.5116 (.0790)	0.4625 (.0753)	0.6279 (.0850)	0.6145 (.0924)	0.5991 (.0853)	0.5049 (.0828)	0.4521 (.0818)	0.6303 (.0867)	0.6143 (.0941)	0.5825 (.0868)	0.5279 (.0821)	0.4468 (.0731)	0.6209 (.0882)	0.6153 (.0925)

Table 4.46

Simulation Results – Task Performance

Parameters		**Task Interdependency = .25**					**Task Interdependency = .5**					**Task Interdependency = .75**				
Knowledge Transmission Ratio		1	2	4	0.5	0.25	1	2	4	0.5	0.25	1	2	4	0.5	0.25
	ID	a	b	c	d	e	f	g	h	I	j	k	l	m	n	o
Organizational Complexity = .25	1	0.6361 (.1010)	0.5009 (.0681)	0.4069 (.0576)	0.7561 (.1192)	0.7936 (.1088)	0.6671 (.1062)	0.5069 (.0722)	0.4401 (.0595)	0.7548 (.1160)	0.7964 (.1146)	0.6369 (.0943)	0.5089 (.0659)	0.4220 (.0552)	0.7482 (.1171)	0.7956 (.1177)
Organizational Complexity = .5	2	0.6357 (.0914)	0.4967 (.0692)	0.4162 (.0541)	0.7502 (.1215)	0.8027 (.1082)	0.6370 (.1057)	0.5146 (.0673)	0.4235 (.0524)	0.7783 (.1152)	0.8063 (.1094)	.6521 (.1065)	0.5184 (.0676)	0.4171 (.0528)	0.7250 (.1074)	0.7912 (.1099)
Organizational Complexity = .75	3	0.6542 (.0967)	0.5247 (.0703)	0.4318 (.0597)	0.7468 (.1086)	0.8040 (.1215)	0.6597 (.1057)	0.5076 (.0649)	0.4248 (.0601)	0.7616 (.1088)	0.7992 (.1122)	0.6457 (.1033)	0.4963 (.0616)	0.4137 (.0567)	0.7601 (.1198)	0.8081 (.1131)

With respect to statistical differences, several key findings were detected. First, it is evident that the highest performance was observed when task interdependency is moderate, organizational complexity is high, and agents favor transmitting vision-related knowledge. Newly generated knowledge consistently performed highest when knowledge transmission moderately favored vision-related knowledge. Peak performance was observed at high organizational complexity with moderate levels of task interdependency. At high levels of organizational complexity, preferences toward vision-related knowledge yield significantly greater levels of newly generated knowledge than does preferences toward day-to-day knowledge (at all levels of task interdependency). At moderate levels of organizational complexity, preferences toward vision-related knowledge yields significantly greater levels of newly generated knowledge than does preferences toward day-to-day knowledge, more so with moderate to high task interdependency. At low levels of organizational complexity, preferences toward vision-related knowledge yields significantly greater levels of newly generated knowledge than does preferences toward day-to-day knowledge, yet only within the same levels of organizational complexity.

With respect to task performance, all default runs generated significantly higher rates of task performance than all runs in which agents strongly favored vision-related knowledge. Additionally, all runs in which agents favored vision-related knowledge produced significantly better task performance than runs in which agents favored day-to-day knowledge. Thus, when agents resist vision, task performance is severely damaged.

Fragmented Interaction

Using what was learned from the previous exploration, I revisit the Greek Life population to identify the potential effects of removing agents with high levels of vision-related knowledge transmission. In doing so, a set of simulations are run that project the evolutionary outcomes of the removal of key agents with respect to the organizational vision.

Using the simulation tool called NearTerm Analysis in ORA (Lin and Carley, 1997), seven total simulations are run. Each simulation is run over 25 time periods and repeated 25 times for optimal accuracy. The initial organizational vision (47%) suggests that using time periods any higher than 25 is redundant. They would diffuse at a decreasing rate due to the limited knowledge left to diffuse. Agent removal takes place in time period two in each simulation. Like the generated environment, each simulation begins with a certain level of knowledge. In this case, the initial knowledge level is based to those who support a vision belief. The diffusion of vision per simulation is plotted over time. As defined earlier, diffusion is calculated as a percentage of those who possess the idea over the total possible.

Removal of most zealous agent. The first simulation will remove the agent with the highest level of support for the overall aspirations for Greek Life. For our purposes, this agent is referred to as the "most zealous" agent. The most zealous agent is the agent with the highest Greek Life vision centrality. The agent with the highest coefficient is considered the most zealous since they are the agent that holds the highest level of support toward vision. Coincidentally, the agent with the highest level of zeal is also the

most opinionated agent. The most opinionated agent is defined as an absolute sum value of total belief ratings. Results are shown in Figure 4.9 and Figure 4.10.

For reference, the first figure displayed is the deviation from the typical vision diffusion baseline. The red line is the baseline while the blue line is the new path of diffusion when an agent is removed. The second figure is the evolutionary trajectory of vision diffusion over time. Similar to the first figure, the red line is the baseline, while the blue line is the path of diffusion when an agent is removed.

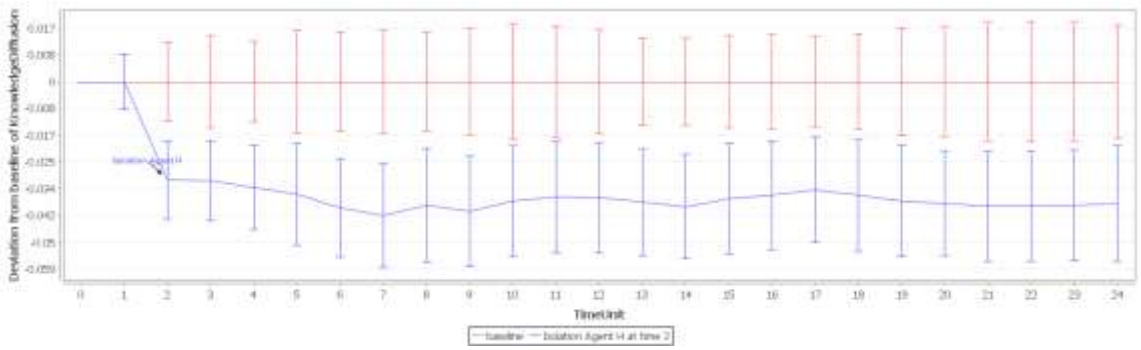

Figure 4.9

Simulation from the Baseline – Removal of Most Zealous Agent

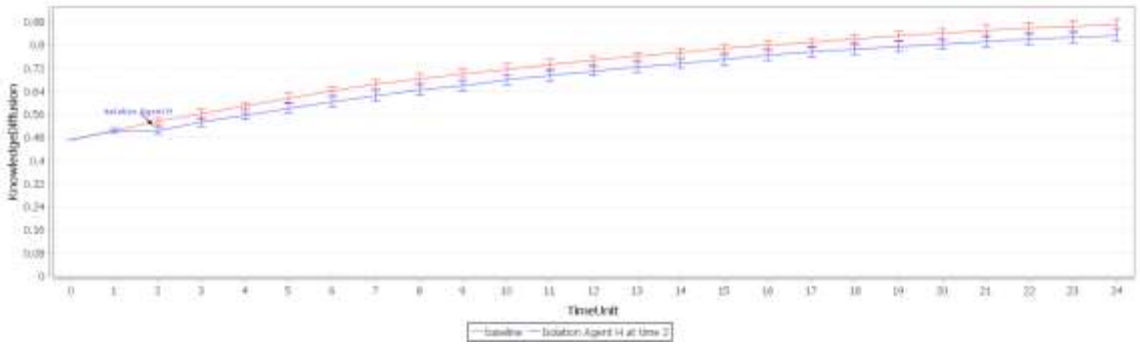

Figure 4.10

Evolutionary Trajectory – Removal of Most Zealous Agent

A significant loss in vision diffusion occurs immediately following the agent removal, and remains consistent throughout all remaining time periods.

Removal of most cautious agent. The second simulation removed the agent with the highest level of perception of a threat toward the overall aspirations for Greek Life. This agent is referred to as the "most cautious" agent. In other words, they have the strongest feelings about the obstacles of future aspirations. The most cautious agent is the agent with the highest Greek Life obstacle centrality. The agent with the highest centrality coefficient is considered the most cautious since they are the agent which is most central to considering threats.

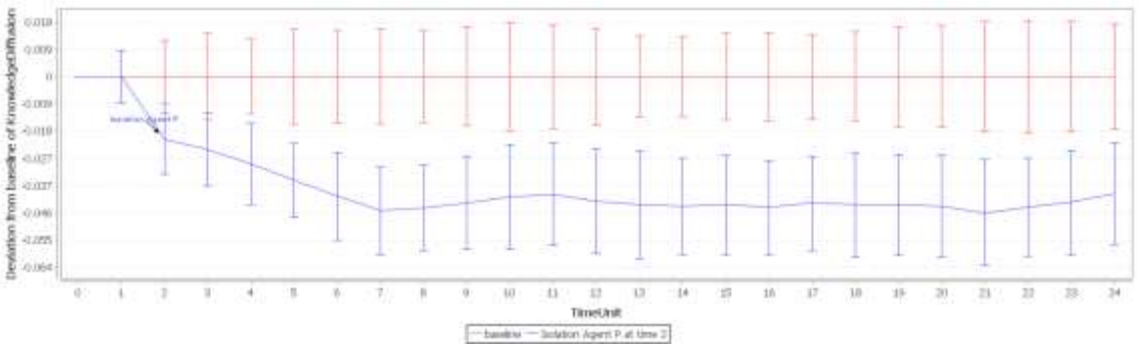

Figure 4.11

Simulation from the Baseline – Removal of Most Cautious Agent

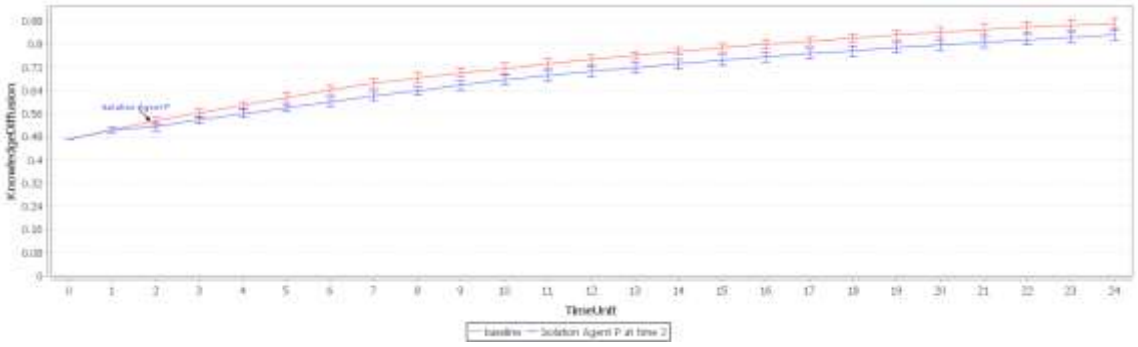

Figure 4.12

Evolutionary Trajectory – Removal of Most Cautious Agent

Like the removal of the most zealous agent, the removal of Agent P reports a significant loss in vision diffusion, but not immediately following removal.

Removal of most optimistic agent. The third simulation will removed the agent with the highest level of optimism toward the overall aspirations for Greek Life, referred to as the "most optimistic" agent. The most optimistic agent is calculated by subtracting Greek Life obstacles centrality from the Greek Life vision centrality. The agent with the

highest coefficient is considered the most optimistic, since they are the agent that holds the highest level of support toward vision while considering obstacles.

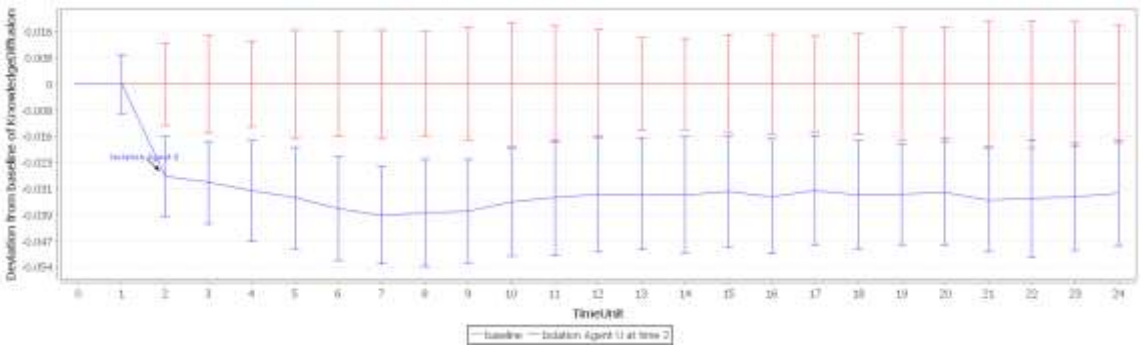

Figure 4.13

Simulation from the Baseline – Removal of Most Optimistic Agent

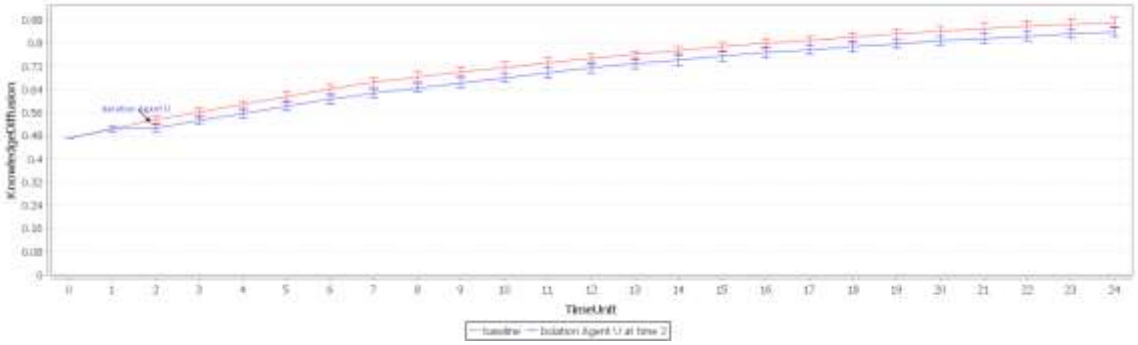

Figure 4.14

Evolutionary Trajectory – Removal of Most Optimistic Agent

A significant effect occurs in the removal time period, but begins to level out towards the end of the simulation.

Removal of most pessimistic agent. The second simulation removed the agent with the highest level of pessimism toward the overall aspirations for Greek Life while considering for the obstacles to vision, thus the "most pessimistic" agent. In other words, this agent feels much more strongly about the potential obstacles than the overall vision. The most pessimistic agent is calculated by subtracting Greek Life vision centrality from the Greek Life obstacles centrality. The agent with the highest coefficient is considered the most pessimistic, since they are the agent that holds the highest level of consideration for threats while considering vision.

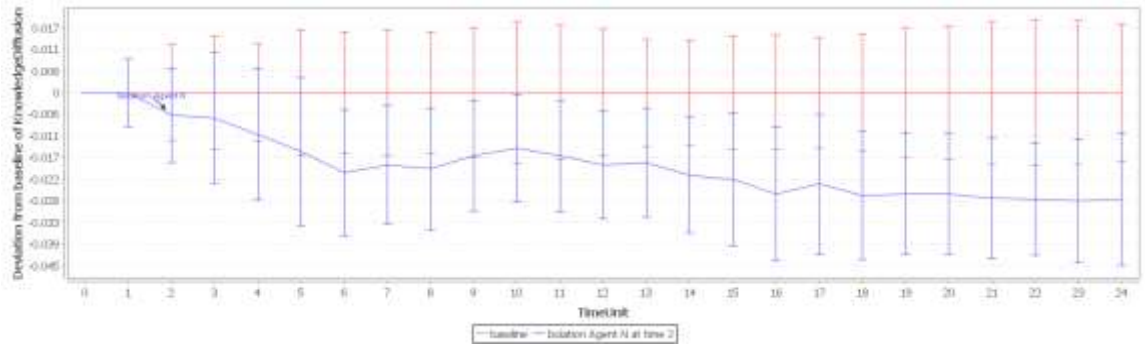

Figure 4.15

Simulation from the Baseline – Removal of Most Pessimistic Agent

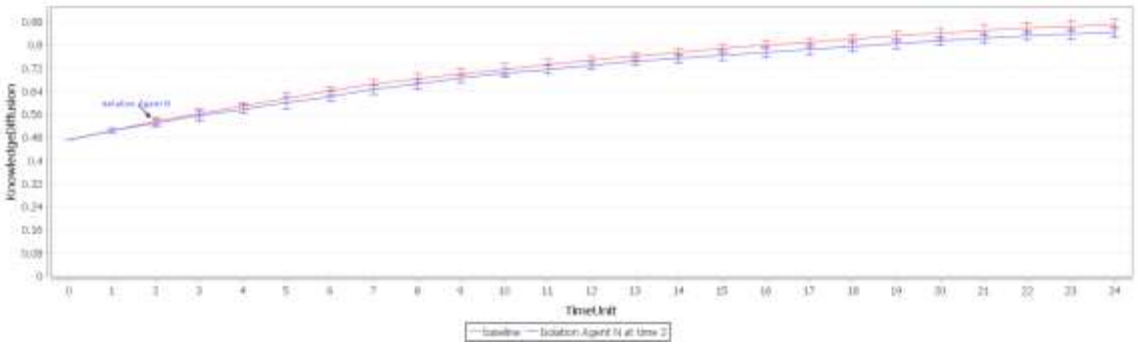

Figure 4.16

Evolutionary Trajectory – Removal of Most Pessimistic Agent

No significant effect occurs during any time period, although the loss in vision diffusion is directionally lower than the baseline.

Removal of most neutral agent. The next simulation will remove the agent that is the most neutral with respect to supporting Greek Life aspirations. The most neutral agent is an absolute sum value of the total belief ratings. The agent with the lowest coefficient is considered the most neutral.

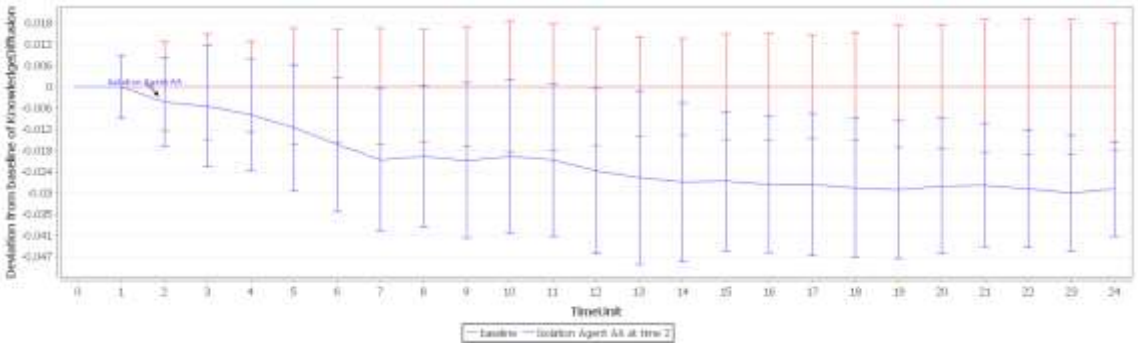

Figure 4.17

Simulation from the Baseline – Removal of Most Neutral Agent

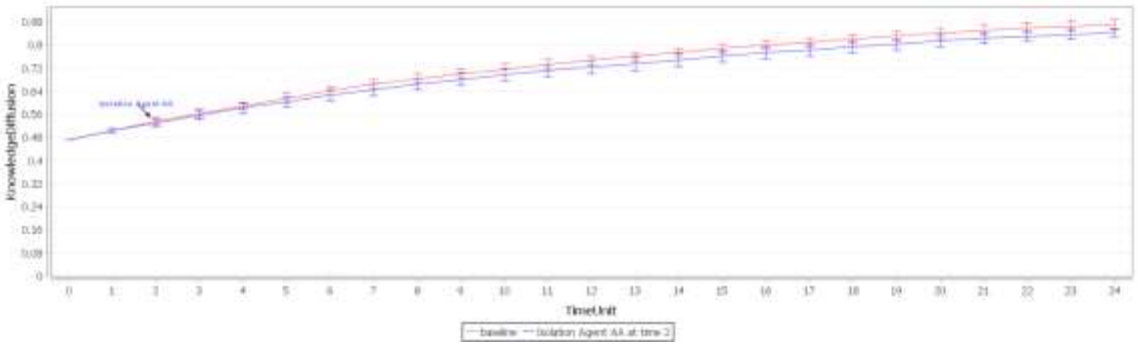

Figure 4.18

Evolutionary Trajectory – Removal of Most Neutral Agent

Not surprisingly, no significant effect occurs within the 25 time periods, although diffusion is directionally lower than the baseline.

Removal of emergent leader. The next simulation will remove the agent that is considered the most likely to emerge as a leader. As observed in the analysis of key agents, the emergent leader is the one with the highest level of cognitive demand.

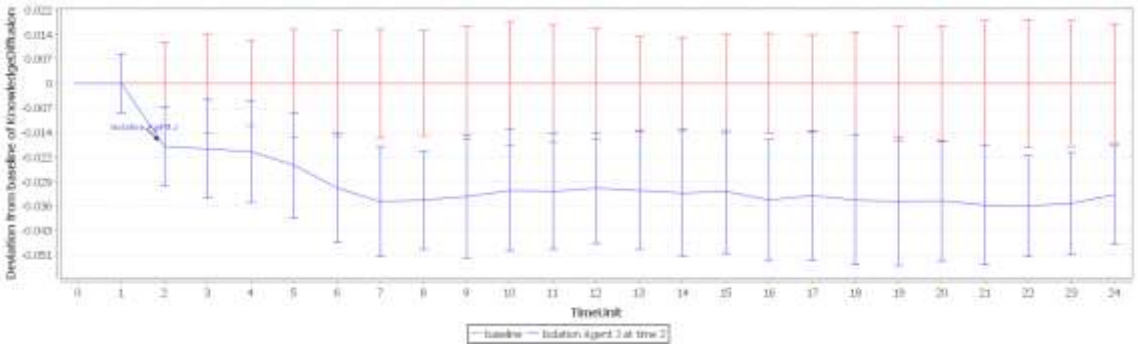

Figure 4.19

Simulation from the Baseline – Removal of Emergent Leader

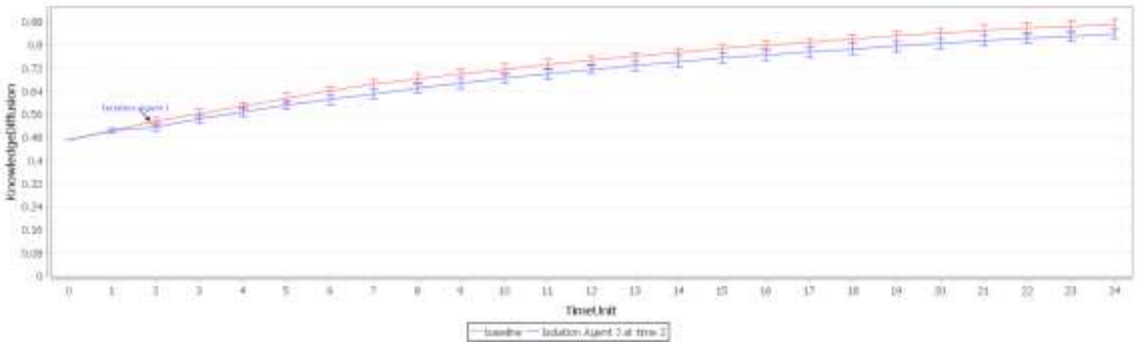

Figure 4.20

Evolutionary Trajectory – Removal of Emergent Leader

Surprisingly, a significant effect occurs in time period 2, yet losses appear to level off in further time periods, thus allowing for significant and non-significant variation.

Removal of agent in the know. The next simulation will remove the agent that is most linked to others, thus most likely to receive information. As observed in the analysis of key agents, the agent in the know is the one with the highest level of total degree centrality, thus most likely to have access to ideas, thoughts and beliefs of others (Carley, 2010).

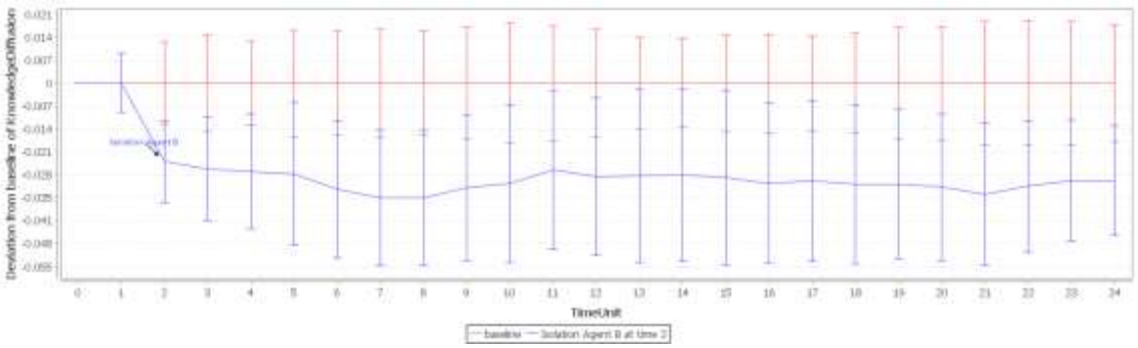

Figure 4.21

Simulation from the Baseline – Removal of Agent in the Know

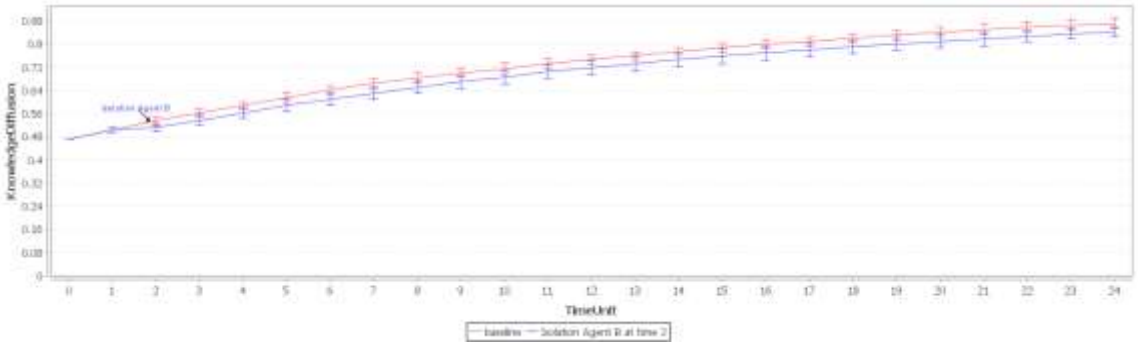

Figure 4.22

Evolutionary Trajectory – Removal of Agent in the Know

Surprisingly, no significantly affect occurs during any time period.

Summary of simulations. Table 4.47 shows the results of all seven simulations. Interestingly, those with the most extreme feelings in either direction have the greatest effects on knowledge upon removal. Additionally, the agent that is most connected to all sides of vision reported the lowest loses of vision when removed.

Table 4.47

Results from Simulations

Agent Category	**Agent Removed**	**Knowledge loss**
Most Zealous	Agent H	3.80%
Most Cautious	Agent P	4%
Most Optimistic	Agent U	3.20%
Most Pessimistic	Agent N	2.80%
Most Neutral	Agent AA	2.80%
Emergent Leader	Agent J	3.30%
In the Know	Agent B	2.80%

CHAPTER FIVE

DISCUSSION

This chapter serves to address the research questions and discuss the findings, potential implications and limitations of this study. This discussion is led by the proposition of a theoretical model of complex organizational vision.

Complex Organizational Vision Model

This study was guided by the research question: How does organizational vision interact with networked interdependency among organizational agents (people, resources, knowledge and roles) to influence leader-related beliefs and task performance? To support this question, the following questions are posed:

1. What distinct groupings related to the organizations' vision exist within the dynamic network?
2. How does social and relational influence and knowledge interaction impact the beliefs of agents within an organization?
3. How would the organizations' vision change conditioned on the removal of internal and external pressures, organizational concerns and perceived obstacles?
4. Which pattern of vision (uniform or fragmented) is most effective for organizational learning and task performance?

These questions were explored in a variety of ways. In summary, a dynamic network analysis was conducted, utilizing a multitude of analysis tools within the ORA

software package. The first supporting research question regarding groupings related to vision was investigated using Newman's grouping algorithm, which served to group like nodes within the Meta-Network and to differentiate heterogeneous nodes. The second supporting question, the impact of interaction on beliefs, was answered using Friedkin's algorithm (1998) in belief propagation analysis. The most important, most contentious, and most strongly held beliefs as well as the most opinionated and most neutral agents were identified in this analysis. Additionally, several simulations were conducted to identify the influence agents have on organizational beliefs over time. The third supporting question on how vision would change with different contexts was investigated using Immediate Impact analysis. Key, potentially threatening entities were removed to assess the effects on the overall organizational vision.

The fourth supporting question, the effects of patterns of vision groupings and learning and performance, was investigated using two simulation techniques. First, using Construct, a computational model was developed based on a generated environment. No survey respondents were used for this computational model – rather, the generated environment served as a randomly generated network with pre-existing default network conditions. Within the generated environment, two types of parameters were altered: organizational structure and behavioral structure.

Two types of organizational structure were tested: network complexity and task interdependency. Network complexity is the probability that an agent might interact with another agent within the network. With respect to network complexity, low levels of network complexity (low likelihood of interaction) suggest that the network is

fragmented due to low levels of agent interaction probability. When agents are not able to interact with others in the network, they are considered fragmented. Additionally, low and high levels of task interdependency relate to fragmented interaction patterns. Low levels of task interdependency suggest that the network is primarily knowledge seeking, thus little is learned through performing tasks. In other words, agents are more likely to perform tasks individually (or have tasks specific to their role) and share knowledge through social or relational interaction. High levels of task interdependency suggest that the network is principally task focused, thus agents primarily learn through performing tasks. In this case, agents exchange a majority of knowledge through mutually performed tasks, potentially limiting the diversity of knowledge exchange. Contrarily, uniform task interdependency assumes that knowledge is equally likely to be diffused through task interaction or knowledge seeking behavior.

The second component, behavioral structure, assumes three patterns, two of which are fragmented and one of which is uniform. This component is referred to as behavioral since it is dictated by the actions and motivations of agents. In this experiment, there are two knowledge sets: day-to-day knowledge and vision-related knowledge. As you recall, uniform behavioral structure assumes that agents are equally likely to transmit day-to-day knowledge as they are to transmit vision-related knowledge. Fragmented behavioral structure assumes that agents are more likely to transmit one knowledge set than the other. If agents are more likely to transmit day-to-day knowledge than vision-related knowledge, this is a fragmented behavioral pattern. Conditions in this

generated environment were altered and simulated to 250 time periods. Two outcome variable measures were assessed: newly generated knowledge and task performance. The Construct experiments served as a segue to the next sequence of simulations. Since it was identified through the Construct experiments that agentic behavior plays the most significant role in knowledge diffusion and task performance, a supporting investigation was conducted. The purpose of this investigation was to identify which critical agents (defined by key characteristics with respect to the organizational vision) play the most significant role in diffusing vision. Subsequently, it was important to identify what long term effects could occur given the removal of these individuals from the informal network. Therefore, in order to identity effects of vision diffusion over time, seven key agents were removed during a single time period, thus fragmented from the network.

Thematic Findings

Several key themes emerge in this research. Overall, it is evident that vision is not simply a future aspiration for an organization. Vision requires understanding of the deep rooted aspects of the organizations and the present state of the organizations, notably the agents' role in the organization. It is also apparent that it is not the aspiration of a single leader, or even a single entity; rather, it is a collaboration of multiple entities. Evidence exists throughout this study that vision is influenced by group dynamics. In this study, agents bring certain sets of beliefs and values to the organization, which are deeply rooted within the individual. The values of individuals are interrelated within the organization, thus they cluster easily. Interestingly, while leader and organizational

values showed deep patterns of alignment, beliefs about the organization do not. As you may recall, beliefs, unlike other entities within the organization, did not group naturally; rather, it appears that no clear patterns of beliefs exist among agents. It is likely that each individual belief could group with many others given different contextual conditions. In other words, each belief can, at any given point, belong to a different cluster grouping. This is an interesting finding, which suggest several possible reasons.

First, it is possible that a belief groups with another when one pattern is agreed upon while the other is not. For example, it is common to accept that those who agree that chocolate is the best flavor of ice cream also disagree that vanilla is the best flavor of ice cream; these two attitudes may be conceptually linked because they are mutually related—as one increases, the other decreases. Second, it is possible that the opposite occurs: one belief can group with another because attitudes about one positively influence attitudes about another. For example, it may be that those who like ice cream also like milkshakes. The third possibility may be conditional and one step further than the example prior: those who like ice cream may also like milkshakes, but only if that flavor is chocolate (or vanilla).

The apparent random nature of belief clusters (of individual agents) begs the question: When agents interact over time and beliefs diffuse, do patterns become more evident? The result, simply, is that belief clusters do take form after evolutionary agentic interaction occurs. This is not to suggest that beliefs of individuals are purely random, rather, this suggests that beliefs at the individual level are, in a sense, immeasurable. So it is possible that aggregated beliefs of individuals are difficult, if not impossible to

measure, until they become organizational beliefs. In this sense, organizational beliefs are those of a dynamic of agents, which upon agent belief interaction, emerge as organizational beliefs.

In summary, values and beliefs are foundational, or rooted within individuals. When dynamic interaction occurs, values and beliefs coalesce and become organizational. In fact, not until interaction occurs do beliefs develop identifiable patterns. Beliefs are the product of interactive dynamics as complexity theory predicts rather than the accumulation of individual beliefs.

While values and beliefs are foundational, other organizational agents--knowledge, resources and roles (or tasks)--occur in the present state of the organization. Findings showed that agents are most likely to interact when exchanging knowledge or when sharing tasks. Thus, agents bring their values and beliefs to the present state of the organization, whereby they are equipped with some form of knowledge, tasks and resources, and interact through knowledge and tasks.

Additionally, agents interact with pressures which can influence behavior. Complexity theory proposes that pressures are the motivating force behind change in an organization, and this appears to be born out in the results for this study. Pressures appear to have somewhat of a stifling effect on future aspirations of the organization but removal of certain pressures has differing impacts. The same is true of perceived concerns. In its present state, the organization is at a point of equilibrium. By removing pressures or concerns, the organization is distressed and moves to a state of disequilibrium, as complexity theorists predict (Lichtenstein & Plowman, 2009); this can have a positive or

negative effect on future aspirations. A positive effect occurs when equilibrium shifts away from stifling the key aspirations of the organization. A negative effect occurs in two cases. First, it occurs when equilibrium shifts towards the key aspirations of the organization. Second, removing potentially threatening entities can add strength to existing pressure or concerns, thus making them more central to the organization. This can have a great impact on the future of an organization. Since pressures are more likely to involve interactive agents and concerns are more likely to be conceptual in nature, the effects are slightly different. Removal of a single pressure node relieves more stress from an organization than the removal of a single perceived concern. Pressures, in general, are more central to the organization, and have more direct impact. The impact of pressures is also more likely to be observed in real life. Since concerns are perceptions, they have a more unique impact, one that may be harder to observe. Thus, removal of a single concern may enable the strength of other like concerns, which may later emerge as threats of a larger scale. Therefore, it is likely that true impacts of concern removal may not be observed unless they are conceptual.

Another finding was that several different organizational structures enabled different outcomes of vision diffusion and task performance. From a behavioral perspective, organizations diffuse vision more effectively when allowing for diversified ideas, which is a key argument of complexity leadership theory. This is observed in two forms. First, organizations that do not allow for differing opinions about organizational vision stifle its growth potential. An organization which immobilizes diverse ideas stifles the diffusion of vision over time. It is evident that immobilizing individuals with diverse

ideas has an even larger impact than those who are influential due to network position. Second, organizations that are grounded by day-to-day knowledge stifle the growth of vision-related knowledge. Vision grows exponentially when emphasis is placed on vision-related knowledge by organizational agents. Structurally, organizations that are moderately task interdependent (Kauffman, 1993; Marion, 1999) foster the highest levels of newly generated knowledge diffusion. By enabling behavioral fragmentation and structural uniformity, organizational performance reaches an optimal level. Simply, behavioral fragmentation and uniform structure allow for the greatest diffusion of organizational vision and the most effective task performance levels.

In summary, organizational vision is influenced by group dynamics, whereby the foundations and present states relate to that influence; interaction influences and diffuses beliefs, and structural vision patterns, uniform or fragmented (for both organizational and behavioral) have differing effects on the outcome, or future, of organizational vision.

Model Proposition

Figure 5.1 is a proposed theoretical model for complex organizational vision. The model proposes a bottom-up, dynamic, interactive environment which allows vision to diffuse and evolve over time. Complex organizational vision is rooted by foundation values and beliefs about the organizational, while driven by organizational agents, most notably the individuals within the organization. Evolution of vision occurs through the interaction of ideas, aspirations, beliefs and potential threats.

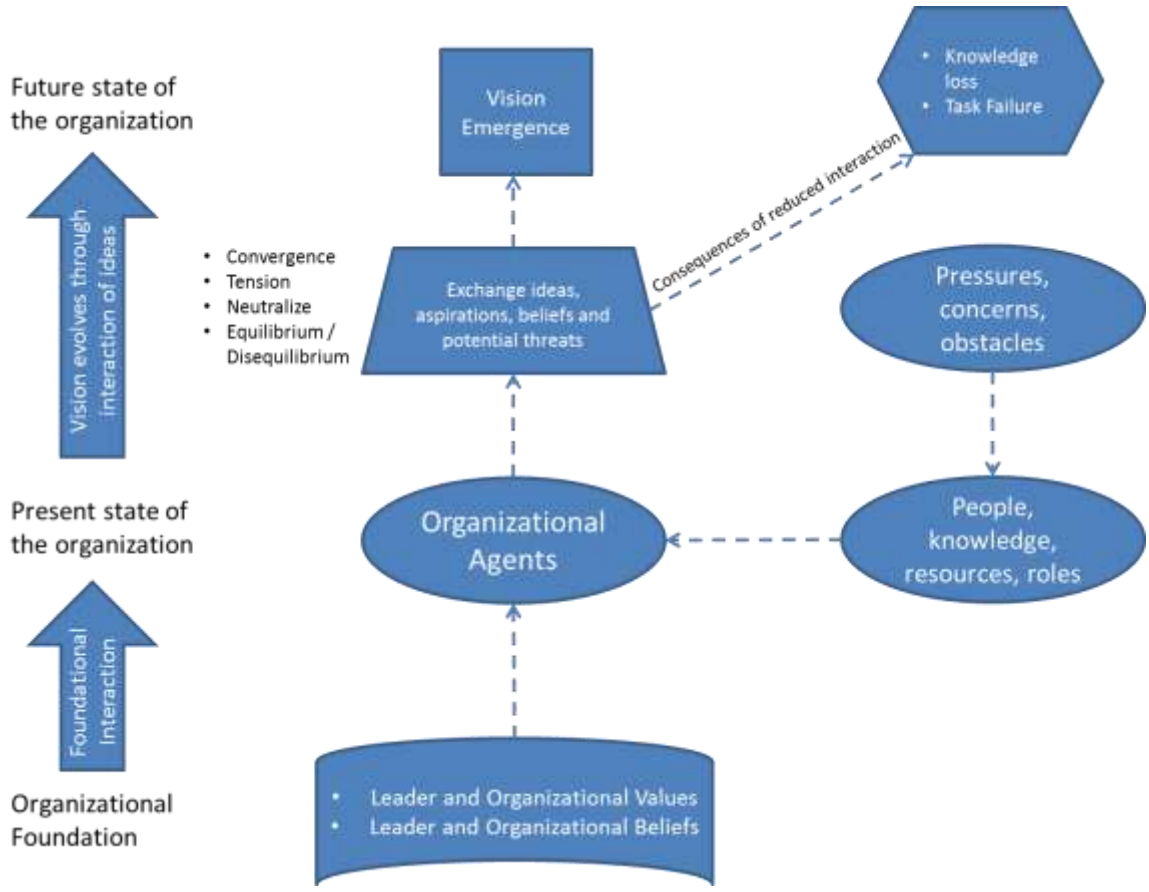

Figure 5.1

Complex Organizational Vision Model

Organizational Foundation

The organizational foundation is the core of the dynamic under investigation; it is guided by values and beliefs about the organization. Values have two key components: leader values and organizational values. Leader values are those held by individuals within the organization. Organizational values are those that are believed to be shared within the organization. Beliefs are ideas about the state of the organization. They can be positive or negative and likely vary by individual.

First, examining leader values, we learned of four core types of leader values. While it is likely that each leader shares a certain degree of each value, these values emerged as key heterogeneous components. The first key component is that of leading by example. By doing so, leaders strive for loyalty, equality and mutual respect. The second component is leading through emotion or inspiration. Leaders are likely grounded by faith and spirituality while practicing a forward thinking approach.

The third component involves an environmental assessment, likely identifying the potential threats to the organization. The fourth leader values component is that of working hard and approaching organizational members with up-front honesty. These leaders are most likely to be willing to adapt, and are persistent in order to achieve positive change.

Next, examining organizational values, three common components emerged: social interaction, competition and heterogeneity. Individuals contributing to complex organizational vision seek social interaction. This is especially evident in the Greek Community, as members are most likely to interact through social and philanthropic events. This interaction promotes unity, community and shared purpose. Additionally, competition is evident. This is especially appreciated in the Greek Community, as competition enables chapters and individuals to distinguish themselves. Third, organizations value heterogeneity, meaning diverse thinking, promoting the brand of diverse thinking and values, and connecting with those with like values. This is a key component in the Greek Community, as it allows for diversity of background, values and beliefs. In summary, organizational values appear to promote unity within diversity.

With respect to Greek Life beliefs, a majority are negative. The key focuses reflect a disconnect with authority, lack of equity within the system, potential threats of social change, growth and adaptation and the stresses that come with being an organizational leader. In the exploration of belief propagation, it was found that the top ten beliefs were agreed upon by nearly 80% of the leadership population. The most common themes with respect to belief contention (variation in beliefs) deal with dissention with the administration and the potential growth of Greek Life infrastructure, or significant decisions that could influence the Greek Community future.

It is interesting to note that disconnect with authority (administration) is a contentious topic. Most notably, there is dissention within the leadership dynamic about the feelings of working with the administration. As discussed in Chapter Four, this can likely be explained by two reasons. First, it is possible that those with strong opposition have limited information about the relationship with the administration. Either these agents are disconnected from the administration themselves or they do not regularly discuss Greek Life affairs with those who do speak with the administration. It is worth noting that among the six members in the task cluster which performs roles requiring heavy interaction with the administration (Task Cluster Group 5), four are in the Top 10 Most Neutral Agent category regarding contention over administration. Three of those four are in the Top 5. Second, it is possible that this is a measure of personal or organizational experience in working with the administration. Those who have poor experiences may be unlikely to change their opinion regardless of the circumstances.

Speaking to the second most contentious belief, it appears that the potential growth of Greek Life fosters variation of feelings. As discussed in Chapter 4, this is not surprising given the varying effects such decisions might have on organizations. For example, the Greek Village is a hot topic of discussion and also high in belief variation. Evidence exists throughout this study which suggests that many agents feel the Greek Village is a threat to their independence. Additionally, some chapters may not have the financial resources to support living in a Greek Village, nor might they have the numbers to fill a housing space. Other chapters see no need for a Greek Village; for example, chapters that currently have a house may oppose the Greek Village. To an extent, it would be nonsensical to want another house when the chapter already has significant equity in its own property. The discussion of beliefs returns in later explanations of the Complex Organizational Vision model.

Present State of the Organization

The present state identifies the organizational agents within the dynamic. Specifically, these are people, knowledge, resources and roles. It has been suggested several times in this research that the human is the quintessential agent given the ability to move about the network, exchange knowledge and decide which knowledge sets to share with others (Carley, 1999). This was clearly observed in the Construct experiments, which identified differing effects when agents place different levels of emphasis on vision-related knowledge. In other words, when a new idea emerges within an organization, it is at the hands of the agents within the network to transmit new vision. It

was observed that when agents placed low levels of interest in transmitting vision, the development of newly generated knowledge suffered as did the execution of organizational tasks.

Throughout the analysis of Greek Life agents, it is clearly evident that interaction is a necessity. This will be visited later in greater detail, but it is worth mentioning in each phase of the model. While agents interact with each other, they interact through exchanging knowledge, likely with those with like knowledge and beliefs or those they share tasks with. Visiting organizational knowledge, it is important to note the differences in knowledge. Knowledge can be information, messages, ideas, or expertise. In the case of the Greek Life example, all of these are driven by interaction among agents. Specifically, knowledge related to vision is assumed to be an idea. Other knowledge comes in the form of expertise, which is a specific set of knowledge possessed and exchanged by organizational agents.

In the Complex Organizational Model, knowledge is in the form of expertise which grouped into five components. The first component is the recruitment and training of new members. The second knowledge set is organizational planning. Although planning appears in every aspect of organizations, organizational planning is specific to complex tasks (referred to as energy tasks in the Construct model).

The third knowledge set focuses on organizational policies. These nodes represent the basic requirements met by organizational members. The fourth component is organizational history, traditions and inherited methods of practice. Not only does this entail understanding the culture of the organization, but also the means to properly

govern the organization which have developed over time. The final component is local knowledge. Unlike cultural understanding, local knowledge is the product of repetitive processes and experiences, and is likely specific to the organization itself. Although the entities within the complex organization (for this study, Greek chapters) may all have rituals, those are different from other entities.

While agents interact with knowledge, they also interact with resources. The first of which is the use of experiences and knowledge of others. This includes past leaders, current leaders of like organizations (those with high likelihood of interaction), and senior members of the organizational body. Leaders are likely to seek new knowledge, and a common method is to understand the experience and expertise of others. Second, leaders use common documents and artifacts, specifically those that could be considered guide books for organizational structure.

Third, leaders seek knowledge from the council of their internal body. This council is in the form of executive committees and other individuals with positional power within their organization. Fourth, leaders use a form of communication medium. Fifth, leaders utilize the personnel within their organization. It is likely that they delegate tasks to individuals. It was noted several times that the leader serves as the change agent (Nanus, 1992) with respect to the organizational vision. However, it is common to see organizations lose sight of vision when the vision evolves into a complex set of tasks (Kotter, 1995) or members of organizations fail to take ownership of tasks (Nanus, 1992).

What is most interesting is that the most common leadership knowledge is that which is specific to individual chapters, which in a sense is a wasted resource for the

network dynamic. As a result, knowledge congruence is low, but it is evident throughout this study that leaders place a heavy emphasis on reaching out to each other. While their greatest expertise may relate to their specific chapter, leader interaction fosters the exchange of ideas.

The last of the organizational agents component is that of roles. While this was treated as tasks in the Meta-Network, the themes more align with roles rather than specific responsibilities. Five role types exist within the complex organizational vision model. The first is the administrative role. The administrative function is commonly associated with disseminating information within the organization and playing the role of a key representative of the organization. The second component, participant, implies that leaders participate in activities and functions which are outside the common realm of the administrator. With respect to Greek Life, this includes communicating with alumni, coordinating chapter meetings, participating in big brother/sister activities and managing the chapter budget. This is not to suggest that they are solely responsible for these tasks, but rather that they contribute to them. Since it is likely that each of these tasks have a person directly responsible for their management, leader involvement suggests an active participation in organizational activities.

The third role, ambassador, assumes the role of interacting with bodies outside of the organization. Specifically to Greek Life, this includes national headquarters and serving as a delegate for conferences. The fourth role, acquire and disseminate information, requires the communication of multiple bodies and documenting activities. The fifth role, interaction with authority, looks similar to that of the ambassador, but is

more about interact with authorities over Greek life. This includes interacting with the Board of Trustees, the Greek Life director and other members of campus leadership.

Vision Evolution – Interaction of Ideas

This component on the model (Figure 5.1) reflects the period between the present and the foreseen future state of the organization. Specifically, this is the period in which exchanges occur regarding ideas, aspirations, beliefs and potential threats that shape the future.

Potential threats. First, regarding potential threats, it is obvious that pressures, concerns and obstacles in the interaction phase influence agents in the present state of the organization. Potential threats are perceptions of agents that interact with the knowledge, roles and resources of those agents..

Eight types of pressures emerged in this study, four associated with the leader and four associated with the organization (Greek Life). The four pressures associated with leaders are legitimacy figures, bodies which risk organizational survival, internal constituencies and external constituencies. With respect to Greek Leadership, legitimacy figures (authority) are in the form of national headquarters, chapter advisors and the chapter executive council. While the chapter executive council may not be a higher body over the president, a council that opposes the leader has great potential to damage the ability to lead. Issues that foster risk are risk management, the university administration and rumor-mill communication. As discussed in Chapter Four, the university administration is perhaps the chief disciplinarian when it comes to enforcing policy

within the Greek Community. The most likely source of attention from administration is reported incidents and rumor-mill communication. The administration is most likely to act when they receive reports of an incident or investigate if they hear from sources of incidental chapter activity.

Internal constituencies are chapter members, specifically detractors and alumni, which are entities which are likely to challenge the policies of the administration. The leader is then left to discern between the wants of fellow chapter members and policy. The fourth, external constituencies, is specifically peers outside of the organization as a whole. With respect to Greek leadership, these are friends that are outside of the Greek Community. As discussed in Chapter Four, being a fraternity or sorority president is likely a very demanding role and is esoteric in nature. There is a lot of interaction among presidents who are primarily connected due to their roles, likely because they most understand the demands of the role. Asymmetric information from those who are not Greek is evident. In other words, those outside the Greek Community may have a difficult time understanding the traditions of being a Greek, and the pressures placed on leaders to maintain traditions. Not only is there disconnect between understanding the demands of leading an organization, but the activities of Greek organizations are unique in many ways. Friends outside of the Greek Community likely challenge the actions and attitudes of fellow friends who lead Greek organizations based on a lack of knowledge.

Four organizational threat pressures exist: discernment, the need to convey a positive image, institutional norms, and meeting the minimum standards of membership. Items of discernment require dealing with peer pressure while managing policies of

university authorities. The need to convey a positive image is evident in Greek Life, and is likely common in other organizations. As a result, leaders are tasked with discerning between consistently conveying a positive image from the potential sacrifices that of maintaining this image (parties, etc.). It is no surprise that the media is tied to this category given the strength the media, since the media has the potential to make a significant impact on image in both a positive or negative direction. Institutional norms are entities outside of the organization that influence the norms of the organization given the strength of their connection. In Greek Life, these are parents, the police, and the standards of other universities. Minimum standards of membership entail some form of organizational requirement of its members. For Greek Life, this includes paying chapter dues and managing grades. Members who fail to meet these requirements are likely to be considered for removal from membership.

Concerns also exist in the organization which may neutralize goals and aspirations. Eight such concern components emerged, four with respect to chapter and four with respect to the organization as a whole (Greek Life). With respect to the chapter, the first concern component, loss of identity, appears primarily driven by the behaviors of individuals within the chapter. This is associated with changing social conditions which may foster changes in contribution by membership to the chapter. The second concern component fears the idea of social change, but in the context of the increasing demands for corrective behavior. Worries of presidents point to how changing conditions are altering the motivations and intentions of new members.

Third, adapting to a risk averse culture is becoming increasingly problematic. Leaders agree that risk management is becoming difficult and that past members do not respect the new policies. The fourth primary concern is that Greek Life is losing popularity among students. This is observed by students not appreciating Greek Life and chapters losing new members. In summary, leaders most fear changes of social and cultural conditions that affect their chapters and the added demands required to offset these conditions.

On the macro level, presidents express concern for potential risk behavior and individuals who could pose risks, the incidental behavior itself, outside perceptions and a lack of unity. Leaders appear vigilant to the possibilities of an incident and understand that the actions of Greek students could damage their relationship with the administration. Another threat to Greek Life growth is the perceptions outside the community from people and groups with influence over members. These are the parents, the media, and the university.

The fourth concern component, lack of unity in tackling issues, has unique purpose. While the first three assessed the threats of incident and the potential sources of damage to the chapter, the fourth deals with actions necessary to avoid such threats. Somewhat surprisingly, hazing shows up as associated with the needs for unity in creating change. As discussed in Chapter Four, it is likely that hazing is more connected to some chapters than others, and more likely connected to some Greek Community members than others. Those who are motivated to eliminate issues may face disagreement from Greeks who are not motivated to change. Additionally, the state of the

economy could be linked to this group due to how it may affect some chapters more so than others. Chapters who have financial burdens may have different motivations for Greek Life policies than those who do not. It is possible that the priorities for chapters may differ significantly, and that it may become increasingly difficult to unify a purpose when constraints differ from chapter to chapter. In other words, it is inherently difficult when motivations for change are different. This may make the case for why Greeks should be treated as a whole, but it is apparent that this method is creating heavy dissention within the community and between the administrative bodies.

Interaction – Ideas, Aspirations, Beliefs and Potential Threats

The interaction phase occurs when the present state of the organization looks towards the future state. During this phase, agents exchange ideas, aspirations, beliefs and potential threats. Four key activities take place in the interaction phase: convergence, neutralization, equilibrium/disequilibrium and tension.

Convergence

Visiting the belief propagation analysis, several findings emerged. Agent interaction fosters reduced contention, thus converging on a more uniform organizational belief value. It appears that contention often occurs early on in the interaction period. For Greek Life, this is positive, since Nanus (1992) warns that if results are not seen by organizational members early on, focus will shift away from vision. It is also observed that beliefs with high contention on either side of the neutral point (IE, a supply of believers and non-believers) allow for the extreme believers on either side of neutral to

regress towards neutral. Thus, convergence occurs which enables the two sides (believers and non-believers) to, in a sense, "meet in the middle." In this scenario, agents that are closer to neutral often remain close to the same belief level.

It is observed that when there is a larger supply of believers than non-believers, believers usually maintain their level of belief while non-believers converge toward neutral. As discussed in Chapter Four, in a real-world scenario, this is likely due to one of two reasons. First, it is possible that those with limited information or knowledge may have a preconceived notion on this topic, and when they gain additional information, they adjust their feelings on the subject. The second likely cause is, since only six people in the leadership community felt negatively about this belief, they may have felt outnumbered in their cause, and as a result, conceded their feelings for the best of the organization.

Third, contention increases when there are no non-believers (or likely, when there are no believers), and consequently, no agent changes their mind. Rather, those who feel strongly about that belief, when interacting is enabled with the entire organization, become extreme believers. Therefore, contention does not increase in the form of agents moving away from their beliefs, but rather, increases due to some agents increasing their beliefs while others remain the same.

Equilibrium/disequilibrium. Transitioning into the removal of threatening entities, let's revisit the effects of differing concern and pressure centers. In addition to identifying thematic components, this study sought to identify the impact of removing certain concerns and pressures. Chapter Four examines the removal of single entities as

well as multiple entities. What is interesting in this study (yet may be different for others) is that the amount of influence concerns have over future aspirations is relatively evenly distributed, while pressure influence is very top-heavy.

First, visiting concerns, it is evident that few major changes occur when a single concern node is removed. In a sense, it appears like "shooting rats in a barrel," meaning that removing a single concern shifts the influence toward other concerns. This is not surprising. For example, in a real world setting, if a company feels that their survival is threatened by slow sales, they may set goals toward reducing this concern. This concern might be removed from the equation if the company acquires a new account, thus fixes the issue of survival. In reality, however, this now shifts concerns in another direction, as the newly acquired account may now require significantly greater input from employees. As a result, a new concern, or set of concerns, emerge, such as disgruntled employees, the need to hire additional employees but lacking space, the possibility of relocating the business, and the threat of losing the account given how thinly spread their employees are.

This concept in the model is referred to as disequilibrium. In the example given, the company is at equilibrium when they were concerned with generating sales, yet when this concern is removed, they are at a state of disequilibrium, which in turn may create larger negative impacts over time. This is not to suggest that removal of concerns is a negative concept, but disequilibrium can have damaging effects.

The opposite can occur when the removal of threats creates a new equilibrium. Returning to the simulation of concerns, it is observed that change is much different when a

conceptual concern is removed. While the removal of single concern nodes simply shifts the concern centers throughout the network, the removal of conceptual nodes shifts the concerns toward an alternative concept. This is highly beneficial when concerns aligned with the alternative concept are lower, or if the reduction of conceptual concerns favors a preferred aspiration. In the case of Greek Life, the removal of disconnect with the administration shifts concern impact toward dissention between the Greek Community. Interestingly, while disconnect with the administration is a consistent theme throughout this research, the overall reduction in concern impact is greater when dissention between the Greek Community is removed. It appears that concerns within the Greek Community, while likely perceived to have a smaller impact, actually have more alignment with the aspirations of Greek leadership.

The removal of pressures differs slightly. Since pressure centers are more top-heavy (IE, a great deal of pressure towards a few aspirations) in this study than concern centers, removing a single pressure node creates a large impact in overall pressure centrality. Similar to concerns, when the pressure from the university administration is removed, very little shift in pressure centers occur. While percent change overall is high, this has little overall impact on the influences over Greek Life aspirations. It appears that the greatest shifts in pressure impact occur when leaders are relieved from alumni and detractors within the chapter.

Tension and neutralization. Perhaps the most important exploration with respect to this study is that of identifying the diffusion of vision while considering obstacles. Table 5.1 identifies the most occurring obstacles within the Meta-Network with respect to

aspirations. Table 5.2 identifies the aspirations with most significantly impact by perceived obstacles.

Table 5.1

Most Occurring Obstacles

Rank	Greek Life Vision Obstacles	Value
1	The results of another major incident	6
2	Changing university culture	6
3	Change difficult due to changing student culture	5
4	Departure of Greek Life director	4
5	Greek Community buy in to grow community	3
6	Membership/leadership turnover	3
7	New members need more development	3
8	All Greeks blamed for incidents of individuals	2
9	Economy effecting price of Greek membership	2
10	A loss of chapter identity	2

Table 5.2

Aspirations Most Impacted by Obstacles

Rank	Greek Life Vision	Value
1	No rush deferral	0.438
2	Grow Greek Life population	0.375
3	No alcohol incidents	0.375
4	Build Greek Village	0.313
5	Build brand as polished students	0.313
6	Be top leaders on campus	0.25
7	IFC/Panhel Collaboration	0.188
8	Social event equality	0.188
9	IFC GPA higher than All-Male	0.125
10	Tighten standards for new chapters to enter	0.125

The first thing worth noting is that rush deferral, the most commonly supported aspiration among Greek presidents, is also the most likely to be impacted. Alternatively, growing the Greek Life population, the second most likely impacted aspiration, fields one of the lowest united aspirations. To assess the effects these perceived obstacles have on vision diffusion, a belief propagation analysis was run, allowing for the interaction of aspirations and obstacles. Table 5.3 shows the results of the simulation.

Recall that dispersion is defined as the average belief value of the entire network for the respective belief. Two important observations materialize from this simulation. First, the presence of obstacles serves to neutralize aspirations. Before the interaction of

perceived obstacles, eliminating rush deferral was the most supported aspiration by nearly a dispersion point. But since it is also the aspiration with the greatest perceived obstacles, it suffers the greatest losses in organizational support. Although it is still the most commonly supported aspiration, the vision is neutralized when outside tension is applied. Little contention occurred with this node, as the obstacle interaction appears to neutralize very close to the actual convergence point. Interestingly, the gap of agreed upon aspirations closes, as becoming the top leaders on campus emerges as a close second aspiration. Given only a 25% obstacle impact for this node (as compared to 44% for no rush deferral), it reports nearly the same level of dispersion as avoiding rush deferral.

Table 5.3

Greek Life Aspirations Simulation

	Without obstacles	With obstacles	
	Dispersion	**Dispersion Before**	**Dispersion After**
Be top leaders on campus	3.630	1.667	1.54
Build brand as polished students	2.444	1.259	1.092
Build Greek Village	1.778	1	0.818
Continue homecoming traditions	3.148	1.148	1.188
Grow Greek Life population	0.741	0.111	0.231
IFC GPA higher than All-Male	2.704	1.889	1.455
IFC/Panhel Collaboration	2.963	1.37	1.253
More info about future members during recruitment	3.519	1.481	1.393
No alcohol incidents	2.259	1.444	1.162
No rush deferral	4.538	1.667	1.663
Social event equality	2.148	1.074	0.985
Tighten standards for new chapters to enter	2.444	0.852	0.892

Consequences of reduced interaction. The consequences of limiting and preventing interaction have already been discussed to a degree. The belief propagation analysis showed that, although many beliefs were negative in regards to the state of Greek Life, upon agent interaction, beliefs about many converge from extreme. These effects were seen at two other points in this study.

During the analysis of entity removal, it was determined that removing agents with diverse ideas had a significant negative impact on vision diffusion. The knowledge loss effects of removing these nodes was even greater than when removing the emergent leader and the agent in the know node, two that are most central to the organization and with the greatest access to information. Additionally, it was observed that when interaction probability is low, the likelihood of vision diffusion was lower than with moderate levels. This also had an effect on the probability of successfully completing a task.

Implications

The purpose of this study is to model the role of vision in a complex organization and the roles that agents, tasks, knowledge, roles, resources and beliefs play. For this purpose, an investigation into the current structure of this model organization is applied. Additionally, this study seeks to develop a better understanding of how agent's individual vision and beliefs about the organizational vision can be influenced over time. This purpose seeks to identify the evolution of vision, therefore, requires a method which simulates how these entities change over time. Lastly, this study serves to suggest Dynamic Network Analysis as a method for exploring organizational vision. Given the nature of these purposes, there are several implications which emerge.

Methodological Implications

Two key methodological implications emerge from this study. First, applying Dynamic Network Analysis and computational modeling to inquiry enables researchers to explore a tenured idea in a new way (Corbin & Strauss, 2008). A majority of research related to vision is biographical, qualitative case studies or empirically designed. Studies published with these methods make for difficulty of practical implication. While Dynamic Network Analysis is a research, theory driven tool, it allows for more actionable outcomes than previously applied methods. DNA allows for vision to be assessed as a network dynamic within an organization.

Second, while other methods require a more generalized approach to research, DNA can be applied to a multitude of organizational conditions. While qualitative methods are grounded by time, resources and possible ethical considerations, DNA is an optimal method to match the limitations. Additionally, while quantitative methods are grounded by its objective nature and rarely enable measuring the effects of individual entities, DNA enables the researcher to immerse themselves in research while quantitatively assessing the effects of altering conditions.

Implications for Greek Life

While the purpose of this study was to model the vision in a complex organization, there is a wealth of implications for Greek Life. As discussed prior, Greeks most effectively propagate ideas, aspirations, beliefs and potential threats which allow for the emergence of vision when enabling for interaction and diversity of ideas. Greeks, in a way, appear to be unified through interaction, primarily through social and philanthropic

means. At the same time, they are unified by diversity, and it is seen that diversity fosters the interaction. Therefore, the growth of Greek Life is, in theory, endogenous. Like network theory suggests, exchange of ideas most commonly occurs when agents seek knowledge and when agents work on similar tasks, thus sharing the same goal.

This study explored and identified the goals of Greek leaders, both personally and for their chapters. Greek leaders seek to develop socially, grow from experiences, enhance their personal values and develop the courage to apply them and, ultimately, to develop the skills to help their chapter succeed. Their motivations for their chapter are much different and diverse. While Greek leaders ultimately seek to grow personally, their goals for their chapter are likely conditional. One segment of leader's wishes to eliminate and mediate the current issues, and in doing so, rebuild their chapter. It is likely not uncommon to see this as a goal, especially considering the conditions of change leaders forecast. It is likely they feel that if they do not correct their current wrongs or prevent future wrongs, their chapter could fall behind the conditions.

Another segment of leaders wish to develop a positive reputation and brand, and do so by competition and winning awards. While it is probably not optimal to favor certain chapters over others, it may be to enable the conditions for chapters to achieve, especially at a national level. This group is also most likely to seek the approval of the university administration, therefore, administrative support towards achievement is likely allows for optimal outcomes.

A third group of Greek leaders wishes to develop an informal reputation. This group is not driven by awards, but rather gaining respect from other chapters and the

student body, and in doing so, building a brand that new students want to be a part of. It is difficult to suggest how to enable this, but the more interaction between organizational members, thus exchanging ideas, the more likely organizations may converge to an aligned idea. As a result, it is possible that these interactions enable the growth of mutual respect as agents adjust their beliefs and aspirations for the best of Greek Life.

A fourth group exists which hopes to develop accountability, mutual respect and pride within their chapter. This is possibly the most difficult to ascertain how practitioners can enable this goal. It is likely, however, that a loosely coupled approach toward this group may relieve some pressure from leaders, which better enable them to achieve their goals.

What is evident is that social conditions are changing, and leaders today identify with these changes. Academics are becoming increasingly important while risk management is becoming harder to manage. It may be that academic conditions are fostering changing conditions of social structure within the Greek Community. As a result, members are likely spending more time on their basic responsibilities, such as academics, while Greek Life serves the social needs to a greater extent. This makes the role of a fraternity or sorority president increasingly difficult.

While it is important to identify the types of Greek leaders, there are other key components for practice identified in this study. First, it appears that there is no clear one-size-fits-all approach to Greek Life. It is evident that Greeks are unified through their commonalities of social and philanthropic contributions, yet all other descriptions of chapters suggest major differences. Beliefs about Greek Life do not appear in a vacuum,

meaning all leaders bring to the table some level of feeling towards their surroundings. While it appears in this setting that Greeks are treated as a whole, leaders reflect that this treatment causes strife among chapters.

Next, it is evident that the portals of communication need clear opening with respect to leaders and figures of authority. The more information and interaction that occurs between leaders and these figures, the less likely leaders are to carry negative beliefs about the organization as a whole. Additionally, enabling interaction between Greek leaders is a key theme. While leaders of Greek organizations appear to be filled with tribal knowledge, they admit that they use each other as a key resource. Additionally, interaction enables convergence of beliefs and aspirations, and the more interaction that occurs, the more likely it is that progress can be made on decisions for the future.

Last, while it appears that Greek Life is treated as a whole entity by authority, the same can be said for the stress that is placed on leaders. It is evident throughout that leaders agree that they are key figures in the liability of errors in the judgment of others. Additionally, they reflect on the daunting tasks undertaken by their day-to-day tasks. As learned in this study, while day-to-day tasks are necessary, the overemphasis on them is potentially detrimental to the development of a positive future.

Implications for Further Study

The findings from this study allude to several possibilities for further research. First, this study, in a sense, makes an open-ended conclusion to the future aspirations of

the organization in question. Evidence points to what decisions might be made, but a longitudinal analysis may serve to explain much more as to how organizations arrive at a vision from a dynamic standpoint.

Another interesting possibility is to explore the different impact of pressures, concerns and perceived obstacles on individual agents and how that influences the entire dynamic. While each participant was allotted to choose from a battery of options for each of these three potential threats, at no point was the level of influence each of these threats play in question. This study may serve as a generalization of the impact of pressures, concerns and perceived obstacles on an organizational dynamic, a more realistic depiction may occur if individuals are allowed to disclose the true effect these threats have on their ability to impact the vision.

From the perspective of Greek Life, several key difficulties exist when hypothetically planning a vision for the organization. First, membership turnover is evident, notably within the leadership bodies. This may have a drastic impact on the long term effects of organizational goals. Second, as discovered in this study, there is a perception of a changing academic and social culture with respect to Greek Life. This may bring forth unique challenges which limit the possibility of seeking resources from past leadership. A unique study would be to identify how long run positive change emerges at the hands of many small steps. A time series Dynamic Network Analysis could serve this purpose well. It would be important to identify what small steps along the way played a role in the major change. This would not necessarily require a longitudinal qualitative approach. An event driven Dynamic Network Analysis may serve

this exploration well, considering for event precedence and knowledge, task, resource and role emergence while considering adaptive belief convergence over time.

In conclusion, the model presented in the concluding chapter of this research is not intended to predict behavior of a network dynamic, but rather, to serve as a theoretical model for further exploration. It may, however, serve practitioners well as a baseline for organizational understanding from a emergent, dynamic environment.

APPENDICES

Appendix A

Structured Interview

Structured Interview: Vision in Complex Organizations

This interview has been developed to assist in a dissertation study at Clemson University intended to understand the network dynamics of an associated group of leaders. This interview is the first component of the study which is intended to gather data to assist in the development of a questionnaire.

The purpose of this study is to examine the network dynamics of organizational vision and its relationship to attributes, goals, beliefs, pressures, concerns, etc. Ultimately, the results of this study will be summarized in aggregate form in appropriate reports, scholarly publications, and scholarly presentations. Your participation in Part 1 of this study will involve partaking in this interview of an approximate length of 30 minutes.

The overall intent of this study is to examine collective structures and processes relevant to being a leader associated with leaders of other organizations, and not to investigate individual behavior. The responses of this interview will be coded into thematic categories that will guide the development of a questionnaire that will be issued to all fraternity and sorority presidents at a later time. These responses are merely for questionnaire development, and *no analysis of this interview will be published*.

Upon completion of the questionnaire, I may follow-up with you either during the current time or at a future time. Thank you for your help in completing Part 1 of this study.

A. With respect to your leadership, what personal goals or accomplishments do you want to achieve personally? (Please list up to 5)

1.

2.

3.

4.

5.

A. What goals or accomplishments would you like to see your fraternity/sorority achieve? (Please list up to 5)

6.

7.

8.

9.

10.

B. What goals or accomplishments would you like to see Greek life as a whole achieve? (Please list up to 5)

11.

12.

13.

14.

15.

C. What are the top five *values* that influence the behavior/decisions of fraternity/sorority presidents?

16.

17.

18.

19.

20.

D. What are the top five *values* that members of the Greek community share?

21.

22.

23.

24.

25.

E. What are your top five *beliefs* related to Greek Life?

26.

27.

28.

29.

30.

F. What are your top five *concerns* with respect to your fraternity or sorority chapter?

31.

32.

33.

34.

35.

G. What are your top five *concerns* with respect to Greek Life?

36.

37.

38.

39.

40.

H. What are the greatest sources of *pressure* fraternity and sorority presidents face? (Please list up to five).

41.

42.

43.

44.

45.

I. What are the greatest sources of *pressure* that members of the Greek community face? (Please list up to five)

46.

47.

48.

49.

50.

J. What are the tasks you take part in which most significantly relate to your leadership role? (Please list up to 10)

51.

52.

53.

54.

55.

56.

57.

58.

59.

60.

K. Who or what resources do you use to lead your fraternity/sorority (fellow brothers/sisters, chapter advisors, tools, technology, etc?

61.

62.

63.

64.

65.

L. What are the top five things that fraternity and sorority presidents need to *know* in order to lead a fraternity or sorority?

66.

67.

68.

69.

70.

M. What are the top five things (artifacts) that influence the behavior/decisions of fraternity and sorority presidents? (chapter bi-laws, new member education manual, risk management guide, etc.)

71.

72.

73.

74.

75.

N. Could you please give a quick summary of the following: in what direction would you like to see Greek life take, both in the short term and the long term?

O. Could you please give a quick summary of the following: What challenges do you see facing Greek life in the short term and the long term?

Appendix B

Informed Consent

Information Concerning Participation in a Research Study

Clemson University

A Dynamic Network Analysis of Vision in Complex Organizations

Description of the research and your participation

You are invited to participate in a research study conducted by Jon Christiansen with Dr. Russ Marion serving as the Principal Investigator. The purpose of this study is to explore the emergence of organizational vision and the interactive dynamics of leadership related to vision. This questionnaire was developed based on structured interviews conducted with over 10 members of the Greek Leadership Community. This analysis will help us understand the structure of the current organization of Greek Life and to simulate the evolution of organizational vision. We are focused on the collective nature of Greek Life rather than the beliefs or behavior of individuals within this study. The data from this questionnaire will be summarized in aggregate form in appropriate reports, scholarly publications, and scholarly presentations.

Your participation will involve voluntary completion of an online survey. The amount of time required for your participation will be approximately **12 minutes**.

Risks and Discomforts

There are no known risks associated with this research. The names of survey participants will be coded anonymously for this study and will at no time be released to anyone other than the researchers.

Potential Benefits

This research will helps us understand the interactive nature of leadership beliefs, knowledge, resources and other relevant entities found within the Greek Leadership Community which aid in the development of a collective organizational vision.

Protection of Confidentiality

We will do everything we can to protect your privacy. Survey data will only be accessible to Dr. Russ Marion, the Principal Investigator, Dr. Craig Schreiber (Co-Investigator) and Jon Christiansen (Co-Investigator). Once the raw data is prepared and secured, all names will be replaced with random codes, at which point, the raw online survey data will be destroyed. Although the names of Greek presidents are present in the questionnaire, your identity is fully protected. The use of your name in the survey is solely to identify the dynamic interactions of leaders in the Greek community rather than the behavior of individuals. Your identity as a participant as well as a survey element will not be revealed in any publication, presentation, or discussion that might result from this study.

Voluntary Participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact Dr. Russ Marion at Clemson University at 864-656-5105 or at marion2@clemson.edu. If you have any questions or concerns about your rights as a research participant, please contact the Clemson University Office of Research Compliance (ORC) at 864-656-6460 or irb@clemson.edu.

1.) I have read this consent form and recognize that consent is implied by choosing to complete this survey.

[ ] I Accept

[ ] I Decline

Appendix C

Questionnaire

Social Interaction Network

1.) Which of the following Greek presidents do you interact with socially?

[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

Greek Life Interaction Network

2.) Which of the following Greek presidents do you discuss the state of Greek Life or matters related to Greek Life?

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]

[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]
[ ]

Organizational Involvement

3.) Please list the other on-campus organizations you are apart of:

_____

Personal Goals

4.) Which of the following personal goals would you like to achieve during your presidency of your fraternity/sorority? (please select up to 7)

[ ] Gain leadership experience for career development

[ ] Develop social networking skills

[ ] Network within the university administration

[ ] Develop diverse relationships

[ ] Enhance personal values

[ ] Grow to appreciate Greek Life at a higher level

[ ] Grow to appreciate my chapter at a higher level

[ ] Develop my own leadership style

[ ] Let go of poor leadership habits

[ ] Develop self-confidence

[ ] Test my will as an individual

[ ] Stand up for students or organizations that are treated unfairly

[ ] Learn to avoid people pleasing

[ ] Learn how to recruit new members

[ ] Challenge faith/spirituality

[ ] Develop courage to stand up for the right decisions

[ ] Use presidential position to positively influence chapter member values

---

Chapter Goals

5.) Which of the following goals would you like to see your chapter achieve during your presidency? (please select up to 7)

[ ] Maintain charter/active status

[ ] Win National Fraternity/Sorority Awards

[ ] Be considered for Philanthropy of the year

[ ] Have a successful recruitment

[ ] Prevent new member drop outs

[ ] Place a member of chapter in IFC/Panhel executive council

[ ] Neutralize chapter members that voice negative attitudes

[ ] Develop chapter name/brand recognition throughout the Greek Community

[ ] Gain respect from other Greek organizations

[ ] Develop a brand for incoming students to know before recruitment

[ ] Gain the respect of the university administration

[ ] Gain the respect of the student body

[ ] Put on meaningful events for university beyond a small philanthropy

[ ] Enhance member accountability

[ ] Fix alumni relations

[ ] Fix mistakes from past leadership

[ ] Develop new recruitment strategies

[ ] Encourage members to lead other on-campus organizations

[ ] Set higher internal chapter standards

[ ] Improve leadership transition

[ ] Make competition about pride for the chapter rather than the pride of defeating others

[ ] Meet requirements to be recognized as an organization by IFC/Panhel

[ ] All chapter members pay their dues

Greek Life Goals

6.) Which of the following goals would you like to see Greek Life achieve?

[ ] Build the Greek Village

[ ] Revise the review for new fraternities/sororities to enter campus

[ ] Take steps possible to ensure no more tragedies/incidents

[ ] Develop equity in the Greek award system

[ ] Encourage Greek Community members to be leaders all over campus

[ ] Develop a major event for university (bigger than homecoming floats)

[ ] Fix the chapter of excellence program

[ ] Improve Greek Community academic standing

[ ] Utilize existing Greek boards for their capabilities

[ ] Hold individuals (rather than organizations) responsible for incidents

---

Leadership Values

7.) Which of the following values most align with your leadership style? (please choose up to 5)

[ ] Work to develop respect among other chapters

[ ] Communicate up front and honestly with chapter

[ ] Work ethic

[ ] Strive to lead by example

[ ] Loyalty for my chapter

[ ] Dedication to chapter

[ ] Persistence

[ ] Equality

[ ] Cautious/Vigilant

[ ] Integrity

[ ] Forward-thinking/Instill a vision for upcoming leaders

[ ] Willingness to change and adapt

[ ] Break norms of past negative behavior

[ ] Faith/spirituality

[ ] Using the presidential title as an opportunity to promote action

---

Greek Community Values

8.) Which of the following values do you feel are most aligned with the Greek Community?

[ ] Unity as Greeks

[ ] Scholarship/Academic Success

[ ] Philanthropy/Service

[ ] Community/Shared Purpose

[ ] Diversity backgrounds/Open mindedness/New learning

[ ] The label/brand of their Fraternity/Sorority

[ ] Competition - be the best chapter on campus

[ ] Social Connection/Network with other Greeks

[ ] Social calendar/Consistent social activity

Chapter Concerns

9.) Which of the following concerns do you have for your chapter going forward? (Please choose up to 5)

[ ] Young members do not understand chapter ritual

[ ] Apathy among chapter members

[ ] University's increasing social standards requiring strong future leadership

[ ] Social aspect is dominating the brotherhood/sisterhood aspect

[ ] Risk management is very difficult to enforce

[ ] Alcohol free housing policies

[ ] Alumni members return to events and do not conform to new policy

[ ] New conditions of Greek Life call for new/creative ideas

[ ] Losing strong chapter identity held in the past

[ ] Incoming students don't embrace Greek Life

[ ] Students today have harsher pressures and conditions

[ ] Losing new members/pledges

[ ] Sense of entitlement from new members

[ ] Difficulty of breaking away from past norms/behaviors/traditions

Greek Life Concerns

10.) Which of the following concerns do you have for Greek Life going forward? (Please choose up to 7)

[ ] Policies for new colonies or new chapters to be recognized by IFC/Panhel are not critical enough

[ ] The administration using the Greek Village to micro-manage Greek Life

[ ] Academic rigor could deter prospective members from joining

[ ] Chapter recruitment is not strict enough/Risky members enter too easily

[ ] Outside perceptions of parents

[ ] Outside perceptions of university

[ ] Risk Management/Threats of an incident

[ ] The economy

[ ] The motivations of the administration

[ ] Alcohol abuse/binge drinking

[ ] Hazing

[ ] Behavior at social functions

[ ] Dissention between Sororities and Fraternities

[ ] Media criticism/shedding negative light

[ ] Laziness/Lack of motivation by Greek students

[ ] Dissention between motivated Greeks and non-motivated Greeks

[ ] Dissention between competing chapters

[ ] The Greek Community has no leverage for bargaining with the administration

---

Leadership Pressures

11.) Which of the following entities place the most pressure on you as a president? (Please choose up to 5)

[ ] National headquarters

[ ] Risk Management

[ ] Chapter Advisors

[ ] Competition between other chapters

[ ] Chapter members with outward negative attitudes

[ ] Rumor-mill communication

[ ] Balancing what chapter wants with what the university demands

[ ] Monitoring possible hazing activity

[ ] Discerning from what chapter wants from what advisors want

[ ] Chapter Executive Council

[ ] Alumni

[ ] University administration

[ ] Friends who are not Greek

Greek Community Pressures

12.) Which of the following entities place the greatest pressure on the Greek Community?

[ ] Peer Pressure/A need to fit in, act, or look like members of the chapter

[ ] Compromising what is wanted for what is needed

[ ] Parents

[ ] Academic stresses

[ ] Chapter dues

[ ] Enforced university policy

[ ] The Media

[ ] University police

[ ] University's Greek Community is held to higher standards than other universities and it is hard to keep up with those standards

[ ] The need to always convey a positive image

[ ] Non-Greek students

Leadership Resources

13.) Which of the following resources do you use to serve as a Greek leader? (Please choose up to 7)

[ ] Past leaders of the chapter

[ ] Chapter Advisor

[ ] Chapter executive council

[ ] Chapter membership

[ ] Other presidents in the Greek Community

[ ] Chapter Vice President

[ ] Officer manual from University

[ ] Officer manual from headquarters

[ ] Officer manual developed by the chapter

[ ] Ritual

[ ] Director of Fraternity and Srority Life

[ ] A past president of another chapter

[ ] IFC President

[ ] PanHel President

[ ] Blackberry/Smartphone

[ ] Financial Budget

[ ] 3rd party social vendors

[ ] Risk Management guide

[ ] Published leadership books

[ ] Chapter of Excellence requirements

[ ] IFC/Panhel Book of Rules

[ ] IFC/Panhel Creed

[ ] IFC/Panhel Judicial

[ ] Recruitment Handbook

[ ] Friends who are not Greek

Leadership Tasks

14.) Which of the following tasks significantly affect your leadership performance? (Please choose up to 10)

[ ] Responding to emails

[ ] Communicating with alumni

[ ] Coordinating chapter meetings

[ ] Communicating/reporting to nationals

[ ] Communicating with chapter advisor

[ ] Philanthropy documentation

[ ] Risk management documentation

[ ] Maintaining membership roster

[ ] Internal problem solving

[ ] Social committee decision making

[ ] Playing the key figure to meet prospective new members

[ ] Presenting the state of the chapter to national headquarters and alumni

[ ] Preparing and running chapter meetings

[ ] Attending Greek community roundtable meetings

[ ] Sitting in chapter judicial meetings/committees

[ ] Serving as ambassador for conferences

[ ] Hosting chapter consultant from national headquarters

[ ] Big brother/sister activities

[ ] Presenting to the Board of Trustees

[ ] Attending all "Big 7" Organizations' meetings

[ ] Holding office hours for Director of Fraternity/Sorority Life

[ ] Acting as a "sounding board" for new ideas

[ ] Managing the chapter budget

Leadership Knowledge

15.) How would you rate your knowledge or understanding of the following?

	Not at all knowledgeable	**Somewhat knowledgeable**	**Very Knowledgeable**	**Extremely Knowledgeable**
University risk management policies	( )	( )	( )	( )
Statistics about Greek Life	( )	( )	( )	( )
Budget/financial planning	( )	( )	( )	( )
Your Fraternity/Sorority History	( )	( )	( )	( )

University History	( )	( )	( )	( )
University Academic Policies	( )	( )	( )	( )
University Judicial Policies and Procedures	( )	( )	( )	( )
Recruitment Policies	( )	( )	( )	( )
National Headquarters Risk Management Policies	( )	( )	( )	( )
Fraternity/Sorority Ritual	( )	( )	( )	( )
Social Calendar Planning	( )	( )	( )	( )
Philanthropy Planning	( )	( )	( )	( )
University administration politics	( )	( )	( )	( )
Chapter of Excellence criteria	( )	( )	( )	( )
University Student Handbook	( )	( )	( )	( )
New member education practices	( )	( )	( )	( )

Leadership Beliefs

16.) Using a scale where -5 means "Absolutely Disagree" and 5 means "Absolutely Agree", please rate your agreement with the following statements

	Absolutely Disagree -5	**-4**	**-3**	**-2**	**-1**	**Neutral 0**	**1**	**2**	**3**	**4**	**Absolutely Agree 5**
The Greek Village is attractive for recruitment	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Greek Village would help to market University	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Greek awards favor certain chapters over others	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The university has more power over chapters than the national headquarters	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Greeks are held to a higher standard with respect to student incidents as opposed to non-Greeks	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
University passes incidents of individual students onto the chapter	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Greek Leaders are forced into positions by the administration that damage rapport with chapter	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The media is the primary cause for the poor reputation	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Letting new chapters on to campus is a short term fix to Greek Community growth	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The state of the economy is driving the price of dues up	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

IFC and Panhel should be treated separately with respect to incidents	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Fraternities and Sororities are complimentary/contribute benefits to each other	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
University police profile Greeks students	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
As a president, there is no luxury of deciding which tasks they want to complete	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Greek Life is the first impression of University for incoming students	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Chapter presidents are at the top of the liability chain	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Chapter of Excellence program has a lobbying effect and doesn't favor the top performers	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
University is reactionary rather than proactive with respect to incidents	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Members of the Greek Community pose the same risks as students outside the Greek Community	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
New fraternities/sororities that attempt to enter university affiliation should have stricter policies to enter	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

The administrations' intention for Greek Life are different from the intentions of the Greek Community	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Greek presidents are overencumbered with day-to-day tasks	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The administration does not work/collaborate with IFC/Panhel, they just dictate and enforce policy	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Working with the university administration is a lost cause	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Greek Community is fully responsible for the criticism of others	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Fraternities/sororities that commit a university offense should be solely responsible, not the entire Greek community	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

Greek Life Aspirations

17.) Using a scale where -5 means "Not at all Necessary" and 5 means "Absolutely Necessary", please rate your aspirations for the following Greek Life goals.

	Absolutely Oppose-5	**-4**	**-3**	**-2**	**-1**	**Neutral 0**	**1**	**2**	**3**	**4**	**Absolutely Support 5**
University should set the Greek Village in motion	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

University Greek Life population should grow (from 25% to 35%-40%)	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Greek Community should be the top level student leaders at University	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Greek Community should build a new brand of polished and successful community/university men and women	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
There should be more collaboration between IFC and Panhel	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
There should be equality of socializing/social events amongst chapters	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The IFC all male GPA to be higher than all university male GPA	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Greek Community should not defer rush to Spring semester	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
There should be no alcohol related incidents	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Greek Community should continue to build the homecoming floats	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

The Greek Leadership should tighten the standards of letting new colonies/chapters on campus	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Greek Leadership should tighten the standards of letting previously deactivated chapters back on campus	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
There should be more access to information about rushees during recruitment	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Fraternities/sororities should disaffiliate with the university	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

Greek Life Obstacles

18.) Using a scale where -5 means "Not at all a threat" and 5 means "A Major Threat", please rate how you feel each of the following could influence/threaten the future aspirations of Greek Life.

	Poses no threat -5	**-4**	**-3**	**-2**	**-1**	**Neutral 0**	**1**	**2**	**3**	**4**	**Poses a major threat 5**
Funding for Greek Village/Funding source unknown	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Chapter housing expenses to live in the new Greek Village	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

A need for buy-in across the Greek Community in order to grow the Greek population	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The results of another major incident	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Membership/leadership turnover/lack of continuity	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
A rash/reactionary administration	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Changing university culture	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
New members are young and need more development	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Greeks are treated negatively in ethical standards/student judicial hearings	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Entire chapters/the Greek community are held responsible for the actions of individuals	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The Board of Trustees has a magnifying glass on Greek Life	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The departure of the Director of Fraternity/Sorority Life	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
Current culture of students doesn't allow for easy adaptation to change	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
The economy driving up the price of membership	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )
A loss of chapter identity	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

A need for Greek Life buy-in to develop equality with respect to social events	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )	( )

Thank You!

Thank you for taking our survey! We greatly appreciate your efforts and support!

Appendix D

IRB Notice of Approval

Dear Dr. Marion,

The chair of the Clemson University Institutional Review Board (IRB) validated the protocol identified above using exempt review procedures and a determination was made on **March 7, 2011**, that the proposed activities involving human participants qualify as **Exempt** from continuing review under Category **B2**, based on the Federal Regulations (45 CFR 46). You may begin this study.

Please remember that the IRB will have to review all changes to this research protocol before initiation. You are obligated to report any unanticipated problems involving risks to subjects, complications, and/or any adverse events to the ORC immediately. All team members are required to review the Responsibilities of Principal Investigators and the Responsibilities of Research Team Members available at http://www.clemson.edu/research/compliance/irb/regulations.html.

We also ask that you notify the ORC when your study is complete or if terminated. Please let us know if you have any questions and use the IRB number and title in all communications regarding this study. Good luck with your study.

All the best,

Nalinee

Nalinee D. Patin
IRB Coordinator
Clemson University
Office of Research Compliance
Institutional Review Board (IRB)
Voice: (864) 656-0636
Fax: (864) 656-4475
E-mail: npatin@clemson.edu
Web site: http://www.clemson.edu/research/compliance/irb/
IRB E-mail: irb@clemson.edu

REFERENCES

Amalweh, R., & Gardner, W. (1999). Perceptions of leader charisma and effectiveness: The effects of vision content, delivary, and organizational performance. T*he Leadership Quarterly, 10*(3), 345-373.

Avery, G. (2004). *Understanding Leadership: Paradigms and Cases*. London: Sage.

Bass, B. M. (1990). From transactional leadership to transformational leadership: Learning to share the vision. Organizational Dynamics. Winter, 19-31.

Bennis, W. (1989). *On becoming a leader*. Reading, MA: Addison-Wesley.

Bennis, W., & Nanus, B. (1985). *Leaders: The strategies for taking charge*. New York, NY: Harper & Row.

Carley, K. (1990). Group Stability: A Socio-Cognitive Approach. *Advances in Group Processes, Advances in Group Processes: Theory and Research*, VII: 1-44. Greenwich, CT: JAI Press.

Carley, K. (1999). On the evolution of social and organizational networks. In S. B. Andrews and D. Knoke (Eds.) Vol. 16 special issue of Research in the Sociology of Organizations. On *"Networks In and Around Organizations,*" 3-30. JAI Press, Inc. Stamford, CT.

Carley, K. (2002). *Summary of key network measures for characterizing organizational architectures*. Unpublished Document: CMU 2002

Carley, K. (2003). Dynamic network analysis. In the summary of the *National Research Council Workshop on Social Network Modeling and Analysis,* R. Breiger and K. Carley (Eds.), National Research Council.

Carley, K. (2003). Dynamic network analysis. Paper presented at the NRC workshop on Social Network Modeling and Analysis.

Carley, K. (2010). *ORA: Organizational Risk Analyzer,*version 2.2.8, January 2011. Pittsburgh: Carnegie Mellon University.

Carley, K. (2002). *Summary of Key Network Measures for Characterizing Organizational Architectures*. Unpublished Document: CMU 2002.

Carley, K. (2010, June). What is dynamic network analysis? A presentation at the CASOS summer institute 2008 at Carnegie Mellon University.

Carley, K., & Frantz, T. (2009). Modeling organizational and individual decision making. In A.P. Sage & W.B. Rouse (& sons) *Handbook of Systems Engineering and Management* (2 ed.).

Carley, K., & Hill, V. (2001). Structural change and learning within organizations. In A.

Lomi & E. R. Larsen (Eds.), *Dynamics of organizational societies* (pp. 63-92). Cambridge, MA: AAAI/MIT Press.

Carley, K., & Reminga, J. (2004). *ORA: Organization Risk Analyzer*: Carnegie Mellon University, CASOS Technical Report.

Carley, K., & Yuqing R. (2001). Tradeoffs between performance and adaptability for C3I architectures. In *Proceedings of the 2001 Command and Control Research and Technology Symposium*, Annapolis, Maryland, June, 2001.

Conger, (1989). *The charismatic leader: Behind the mystique of exceptional leadership*. San Francisco, CA: Jossey-Bass.

Corbin, J. & Strauss, A. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3 ed.). Thousand Oaks: Sage.

Crespi, I. (1961). Use of a scaling technique in surveys. *Journal of Marketing*, 25, 3-26.

Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3 ed.). Thousand Oaks: Sage.

Davis, G. (2010, June). Groups within networks. A presentation at the CASOS summer institute 2010 at Carnegie Mellon University.

Frantz, T. (2010, June). Near-Term analysis. *A presentation at the CASOS summer institute 2010 at Carnegie Mellon University*.

Frantz, T. (2010, June). Illustrative construct results: Mergers. *A presentation at the CASOS summer institute 2010 at Carnegie Mellon University*.

Freeman, L. (1979). Centrality in social networks I: conceptual clarification. *Social Networks, 1*, 215-239.

Friedkin, N. (1998). *A structural theory of social influence.* .New York: Cambridge University Press.

Glazer, B., & Strauss, A. (1967). *The discovery of grounded theory*. Chicago: Aldine Publishing.

Groves, K. (2006). Leader emotional expressivity, visionary leadership, and organizational change. *Leadership & Organization Development Journal, 27*(7), 566-583.

Hanson, W. R. (2009). *Ethical leadership in higher education: Evolution of institutional ethics logic.* Clemson University: Dissertation.

Hawkins, D., Albaum, G., & Best, R. (1974). Semantic differential or staple scale in marketing research. *Journal of Marketing Research, 11*(3), 318-322.

Hirschman, B. (2010, June). Construct in batch mode. *A presentation at the CASOS summer institute 2010 at Carnegie Mellon University*.

Holland, J. (1995). *Hidden order*. Reading, MA: Addison-Wesley Publishing Company.

House, R. & Shamir, B. (1993). Toward the integration of transformational, charismatic, and visionary theories. In M.M. Chemers & R. Ayman (Eds.), *Leadership theory and research: Perspectives and directions* (81-107). San Diego, CA: Academic Press.

Kantabutra, S., & Avery, G. (2006). Follower effects in the visionary leadership process. *Journal of Business & Economics Research, 4*(5), p. 57-66.

Khatri, N., Ng, H., & Lee, T. (2001). The distinction between charisma and vision: An empirical study. *Asia Pacific Journal of Management, 18,*p. 373-393.

Kilduff, M., Crossland, C., & Tsai, W. (2008). Pathways of oportunity in dynamic organizational networks. In M. Uhl-Bien & R. Marion (Eds.), *Complexity leadership, Part 1: Conceptual foundations* (p. 83-99). Charlotte, NC: Information Age Publishing.

Kirkpatrick, S., & Locke, E.A. (1996). Direct and indeirect effects of the three core charismatic leadership components on performance and attitudes. *Journal of Aplied Psychology, 81*(1), p. 36-51.

Kotter, J. (1990). What do leaders really do? *Harvard Business Review, 68*(3), 103-111.

Kotter, J. P. (1995). Leading Change: Why Transformation Efforts Fail. *Harvard Business Review OnPoint* (March-April), 1-10.

Kotter, J., & Heskett, J. (1992). *Corporate culture and performance*. New York, NY: Free Press.

Kouzes, J., & Posner, B. (1987). *The leadership challenge*. San Francisco, CA: Jossey-Bass.

Krackhardt, D. (1999). The ties that torture: Simmilean ties in organizations. In *Research in Sociological Organizations, 16,* 183-210.

Krackhardt, D., & Carley, K. (June 1998). A PECANS model of structure in organizations. In *Proceedings of the 1997 International Symposium on Command and Control Research and Technology.* Monterrey, CA.

Larwood, L., Falbe, C., Kriger, M., & Miesing, P. (1995). Structure and meaning of organizational vision. *Academy of Management, 38*(3), 740-769.

Lichtenstein, B., & Plowman, D. (2009). The leadership of emergence: A complex systems leadership theory of emergence at successive organizational levels. *The Leadership Quarterly*, *20*(4), 617-630.

Lichtenstein, B.B., Uhl-Bien, M., Marion, R., Seers, A., Orton, J.D., & Schrieber, C. (2006). Complexity leadership theory: An interactive perspective on leading in complex adaptive systems. Published in *Emergence: Complexity and Organizations, 8(*4), 2-12.

Lofland, J., Snow, D., Anderson, L., & Lofland, L. (2006). *Analyzing social setting: A guide to qualitative observation and analysis*. Belmont, CA: Wadsworth Thomson.

Manasse, A. (1985). Vision and leadership: Paying attention to intention. *Peabody Journal of Education, 63*(1), p. 150-173.

Marion, R. (1999). *The edge of organization: Chaos and complexity theories of formal social organizations*. Newbury Park, CA: Sage.

Marion, R. (2002). *Leadership in education: Organizational theory for the practitioner*. Upper Saddle River, NJ: Merrill/Prentice-Hall.

Marion, R. (2008). Complexity theory for organizations and organizational leadership. In M. Uhl-Bien & R. Marion (Eds.), *Complexity leadership, Part 1: Conceptual foundations* (pp. 1-15). Charlotte, NC: Information Age Publishing.

Marion, R., & Uhl-Bien, M. (2001). Leadership in complex organizations. *Leadership Quarterly, 12*(4), 389-418.

Marion, R. & Uhl-Bien, M. (2007). Paradigmatic influence and leadership: The perspectives of complexity theory and bureaucracy theory. In J. K. Hazy, J. A. Goldstein, & B. B. Lichtenstein (Eds.), *Complex systems leadership theory: New perspectives from complexity science on social and organizational effectiveness,* (pp.143-159). Mansfield, MA: ISCE Publishing.

McKelvey, B. (1999). Avoiding complexity catastrophe in coevolutionary pockets: Strategies for rugged landscapes. *Organization Science, 10*(3), 294-321.

Nanus, B. (1992). *Visionary Leadership.* San Francisco, CA: Josey-Bass.

Newman, M. (2006). Modularity and community structure in networks. *Proceedings of the National Academy of Sciences of the United States of America, 103*, 8577-8582.

Reminga, J., & Carley, K. (2003). Measures for ORA (*Organizational Risk Analyzer*). Carnegie Mellon University, CASOS Technical Report.

Quigley, J.V. (1994). Vision: How leaders develop it, share it and sustain it. *Business Horizons, 37*(5), p. 37-41.

Schein, E. (1985). *Organizational Culture and Leadership*. San Francisco, CA: Jossey-Bass.

Schreiber, C. (2006). *Human and organizational risk modeling: Critical personnel and leadership in network organizations.* Unpublished Dissertation, Carnegie Mellon, Pittsburgh, PA.

Schreiber, C., & Carley, K. (2004). Construct - A multi-agent network model for the co-evolution of agents and socio-cultural environments. *Carnegie Mellon University, School of Computer Science, Institute for Software Research International, Technical Report CMU-ISRI-04-109.*

Schreiber, C., & Carley, K. (2008). Network leadership: Leading for learning and adaptability. In M. Uhl-Bien & R. Marion (Eds.), *Complexity Leadership, Part I: Conceptual Foundations* (pp. 291–332): Information Age Publishing.

Schwandt, D. R. (2008). Individual and collective coevolution. In M. Uhl-Bien & R. Marion (Eds.), *Complexity Leadership, Part I: Conceptual Foundations* (p. 101-127): Information Age Publishing.

Simmel, G. (1950). Individual and Society. In *The Sociology of Georg Simmel.* New York: Free Press.

Sinkula, J.M., Baker, W.E., & Noordeweir, T. (1997). A framework for market-based organizational learning: Linking values, knowledge and behavior. *Journal of the Academy of Marketing Science, 25*(4), 305-318.

Sosik, J., & Dinger, S. (2007). Relationships between leadership style and vision content: The moderating role of need for social approval, self-monitoring, and need for social power. *Leadership Quarterly, 18*, 134-153.

St. Charles, J. (2010, June). Designing virtual experiments and validation for agent based dynamic network models. A presentation at the *CASOS summer institute 2010 at Carnegie Mellon University*.

Strange, J., & Mumford, M. (2002). The origins of vision: Charismatic versus ideological leadership. *The Leadership Quarterly, 13*(2), 343-377.

Strange, J., & Mumford, M. (2005). The origins of vision: Effect of reflection, models, and analysis. *The Leadership Quarterly, 16*(2), 121-148.

Sproull, N. (2002). *Handbook of research methods*. Lanham: Scarecrow Press, Inc.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park: Sage.

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (2 ed.). Thousand Oaks: Sage.

Testa, M. (1999). Satisfaction with the organizational vision, job satisfaction and service efforts: An empirical investigation. *Leadership and Organization Development Journal, 20*(3), 154-161.

Tichy, N., & Devanna, M. (1986). *The transformational leader*, New York, NY: Wiley.

Uhl-Bien, M., & Marion, R. (in press). Complexity leadership theory. Submitted to *Handbook of Leadership.* London: Sage.

Uhl-Bien, M., Marion, R., & McKelvey, B. (2007). Complexity leadership theory: Shifting leadership from the Industrial Age to the Knowledge Era, *Leadership Quarterly, 18*, 298-318.

Wasserman, S,. & Faust, K. (1994). *Social Network Analysis: Methods and Applications*. Cambridge: Cambridge University Press.

Westley, F., & Mintzberg, H. (1989). Visionary leadership and strategic management. *Strategic Management Journal, 10*(1), p. 17-32.

Young, K. M. (2010). *The college football student-athlete's academic experience: Network analysis and model development.* Clemson University: Dissertation.